The Macroeconomic Effects of Tariff Announcements*

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Abstract

We propose a novel narrative high-frequency identification strategy to study the macroeconomic effects of tariff announcements during the current trade war era. From the universe of LSEG breaking-news headlines since January 2025, we narratively identify 56 U.S. tariff announcements and measure their unanticipated component as the high-frequency revision in the bilateral exchange rates of the targeted trading partners. Using daily local projections, we show that tariff announcements raise the aggregate statutory tariff rate within a few days and push up retail prices, more persistently for imported than for domestic goods. The resulting pass-through of statutory tariffs into imported retail prices is about 20 percent. Consumer spending and equity prices fall. These inflationary and contractionary effects point to tariff announcements acting as adverse supply shocks. They also raise various measures of uncertainty and, contrary to standard theory, weaken the U.S. dollar.

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Keywords: Tariff Announcements, Narrative High-Frequency Identification, Tariff Pass-Through, Daily Local Projections.

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1 Introduction

Starting in early 2025, the United States has waged a rapidly escalating trade war, announcing new tariffs on nearly every major trading partner across a wide range of sectors and raising them to levels unseen since the early 1900s. Understanding the macroeconomic effects of these tariff announcements has since become a pressing issue for policymakers.

Identifying these effects is, however, challenging for two reasons. First, tariff announcements may respond systematically to the economic environment and are therefore likely endogenous. The second challenge is to obtain estimates that reflect how tariffs propagate in the current era of trade wars, as opposed to evidence based on long-run samples frequently used in the literature. This matters because tariff changes in historical samples likely differ from those during the current trade war, in which tariffs are announced and revoked within days or weeks and used as leverage in negotiations with trading partners (Clayton et al., 2023). To the best of our knowledge, no existing work addresses both challenges jointly. den Besten et al. (2026) address endogeneity with a narrative approach, but their estimates average over 180 years of U.S. trade policy, and it remains unclear how informative they are about the current episode. Studies based on post–World War II data instead rely on zero or sign restrictions (Boer and Rieth, 2024; Schmitt-Grohé and Uribe, 2025), and even within this period the estimated effects depend on the sample used for estimation (Franconi and Hack, 2026). As a result, credible evidence on the macroeconomic effects of tariff announcements in the new trade war era is still lacking.

The main contribution of this paper is to close this gap by addressing both challenges jointly. First, we propose and implement a narrative high-frequency identification strategy that allows us to estimate the causal effects of U.S. tariff announcements during the new trade war era. Second, using daily local projections we provide new causal evidence on the macroeconomic effects of these announcements.

Our identification strategy builds on tariff announcement events derived from the universe of LSEG time-stamped breaking-news headlines between January 2025 and July 2026. These headlines capture U.S. tariff announcements made through a broad range of channels, including speeches, press conferences, executive orders, and social media posts. We first retain the headlines related to U.S. tariffs, which yields about 2,500 headlines. Most of them do not report new tariff measures, but repeat the same news across wires, comment on tariffs, report foreign retaliation or court rulings, or cover the implementation and consequences of measures already announced. Based on a careful reading of these

headlines, we apply a set of narrative rules to retain only unanticipated and unambiguous tariff increases announced by the U.S. administration. This leaves us with 56 narratively identified tariff announcement episodes.

In a second step, we combine these events with high-frequency changes in exchange rates around each announcement, which offers two advantages. First, it measures the news content of each announcement, regardless of whether a specific tariff rate was mentioned. Second, it provides additional insurance against remaining anticipation concerns. Specifically, we measure the surprise as the percent change in the dollar exchange rate against the currency of the targeted trading partner from ten minutes before to thirty minutes after the announcement, averaging across currencies when an announcement targets several partners. We validate the surprise series by examining the excess volatility of exchange rates around tariff announcements and the predictability of the surprises from past data.

We then use the surprise series as the identifying shock in daily local projections, combining it with daily data on the statutory tariff rate from Waugh (2025), retail prices from Cavallo et al. (2026), and other daily variables. We find that a tariff announcement surprise raises the statutory tariff rate within a few days, with a peak of about 4 percentage points after roughly two months and a return to its pre-shock level by the middle of the fourth month. Retail prices rise as well, but with markedly different persistence. Imported prices rise by about 0.25 percent after roughly two months and remain elevated for most of the five-month horizon. Domestic prices instead rise by about 0.14 percent after six weeks and return to their pre-shock level by the end of the third month. We then quantify the pass-through of tariff announcements to retail prices and find that about 20 percent of the increase in the statutory tariff rate is passed on to imported retail prices between the second and the fifth month. To the best of our knowledge, this is the first estimate of tariff pass-through for the current trade war based on time-series variation, which accounts for general equilibrium feedback (e.g., Guren et al., 2020; Wolf, 2023). The prior literature instead exploits primarily cross-sectional variation across products (Amiti et al., 2019b; Cavallo et al., 2021, 2026). Our estimate is larger than the 6 percent that Cavallo et al. (2026) find for the 2025 episode using the same retail price data.[1] A plausible reason is that firms not directly hit by tariffs also raise their prices to preserve relative prices, and

[1]Using applied rather than statutory tariff rates, Cavallo et al. (2026) find a seven-month pass-through of 25 percent. Our estimates imply a pass-through into imported retail prices with respect to the applied tariff rate of 30 to 41 percent between the second and the fifth month.

that the depreciation of the dollar amplifies rather than offsets the effect of the tariff on import prices. Estimates identified from variation across products net out both of these general equilibrium effects, a limitation acknowledged by Cavallo et al. (2026), who view their estimate as a lower bound on tariff pass-through.

Beyond prices, tariff announcements lead to a decline in consumer spending, a fall in equity prices and, contrary to conventional theory, a depreciation of the U.S. dollar (see also Ostry et al., 2025). Combined with the increase in retail prices, these results are consistent with the finding of Franconi and Hack (2026) that tariffs act as adverse supply shocks. Trade policy uncertainty, economic policy uncertainty and financial market volatility rise sharply, whereas geopolitical risk does not respond. Finally, the yield curve flattens. We interpret this as evidence that the shock carries two distinct signals that pull yields in opposite directions: a near-term inflationary impulse that raises short-term yields entirely through higher inflation compensation, and a medium-term growth concern that pulls longer-term yields down, consistent with the adverse effects of elevated uncertainty on economic activity (e.g., Jurado et al., 2015; Caldara et al., 2020).

Related Literature. This paper is related to a growing literature that estimates the aggregate effects of tariff shocks using time-series methods. These studies reach different conclusions on the inflationary effects of tariffs. Boer and Rieth (2024) and Franconi and Hack (2026) find that tariffs raise prices, consistent with tariffs acting as supply shocks. By contrast, Schmitt-Grohé and Uribe (2025) find that a transitory increase in tariffs leads to deflationary effects, and den Besten et al. (2026) find that prices fall after World War II. Franconi and Hack (2026) further show that the price response depends on the systematic response of monetary policy and on the sample period used for estimation. The literature has thus not reached a consensus on the price effects of tariffs, let alone delivered estimates for the new trade war era. We contribute to this literature with credibly identified estimates based entirely on the current episode.

A second, more recent strand studies the 2025 tariff episode directly, mostly around the April 2025 "Liberation Day" tariffs. Ignatenko et al. (2025) quantify their welfare effects in a calibrated multi-country trade model. Acharya and Laarits (2026) study empirically their effect on the convenience yield of U.S. Treasuries. Cavallo et al. (2026) instead track retail prices at high frequency over 2025 and estimate pass-through from variation in tariff exposure across products. We complement this literature in two ways. First, rather than focusing on a single event, we estimate the dynamic effects of 56 announcements

over the entire episode on prices, consumer spending and financial markets. Second, our pass-through estimate relies on time-series variation. It therefore includes the general equilibrium effects that cross-product comparisons net out.

Methodologically, our approach combines narrative and high-frequency identification. In the spirit of the narrative approach (e.g., Romer and Romer, 2004), recently applied to tariffs by den Besten et al. (2026), we use the text of each announcement to retain only those that convey unambiguous news about U.S. tariffs. As in the high-frequency identification literature (e.g., Gürkaynak et al., 2005), we then measure the surprise as the asset price movement in a tight window around each announcement. A distinctive feature of our approach is that the asset price used to measure the surprise varies across announcements. For each announcement, we use the exchange rates of the targeted or most exposed trading partners, so as to maximize the signal-to-noise ratio of the surprise.

The remainder of this paper is organized as follows. Section 2 describes the construction of the tariff announcement surprise series and presents a range of diagnostics. Section 3 lays out our empirical strategy, and Section 4 reports the main empirical results. Section 5 conducts a battery of sensitivity checks, and Section 6 concludes.

2 Identification

In this section, we first briefly review the 2025–2026 trade war. We then describe the construction of our narrative high-frequency surprise series. Finally, we present a range of diagnostics to assess its validity.

2.1 The 2025–2026 Trade War

Over the period covered by this paper, the U.S. administration announced tariffs on essentially all major trading partners. Among many other actions, it announced and then confirmed 25 percent tariffs on Canada and Mexico in late January 2025, announced an increase in tariffs on Canadian steel and aluminum from 25 to 50 percent, and threatened 50 percent tariffs on the European Union. On April 2, 2025, widely referred to as "Liberation Day", it unveiled tariffs on nearly all trading partners, with country-specific "reciprocal" rates. A defining feature of this episode, relative to the 2018–2019 trade war, is the speed and informality with which policy was communicated. A large share of the

announcements we identify were delivered through social media posts, press gaggles, or remarks made during unrelated public events, rather than through formal rulemaking.

To account for this feature, our primary data source is the universe of LSEG breaking-news headlines between January 2025 and July 2026. Breaking-news services of this kind are designed to convey market-moving information to subscribers within seconds of its release. Because their headlines are continuously time-stamped and cover both scheduled and unscheduled communications, they are well suited to an episode in which the timing of policy announcements was itself highly irregular.

2.2 Construction of the Surprise Series

Narrative selection. We first assemble a U.S. tariff announcement database with minute-stamp information by retaining all breaking-news headlines since January 2025 that contain at least one keyword from each of two groups: a U.S.-related group (e.g., *US President*, *White House*, *Donald J. Trump*, *U.S.*) and a trade-related group (e.g., *Tariff**, *trade war*, *duties*, *retaliatory tariff**).[2] This yields approximately 2,500 candidate headlines.

The raw tariff-related news is highly heterogeneous, mixing new policy announcements and threats with repetitions, exemptions, court rulings, foreign retaliation, and commentary by officials or market participants. Using the full set of headlines directly would average genuine policy surprises together with substantial noise from repetitions, consequences, and ambiguous statements, diluting the resulting series. We therefore apply the following set of nine narrative rules to isolate clean, unambiguous announcements of new U.S. tariffs: (i) Multiple headlines reporting the same underlying item are collapsed into a single event, keeping the timestamp of the first report. (ii) Restatements of already-announced measures are dropped, unless they add new information. (iii) Items reporting the consequences of tariff news (e.g., a firm's share price reaction) or commentary about it, as opposed to the news itself, are excluded. (iv) Among country-specific announcements, we restrict attention to those targeting at least one major trading partner (the euro area, Canada, Mexico, or China). Announcements that apply to all trading partners are also retained, as are sector-specific announcements irrespective of the trading partners involved. (v) We retain only items that signal higher U.S. tariffs than previously announced or signaled, including threats that do not specify a rate. Items that signal

[2] Appendix Table C.1 reports the full list of keywords.

lower U.S. tariffs or no clear direction are dropped. (vi) Items that combine a tariff increase with a reduction or pause of existing tariffs on other trading partners or products are dropped, since their net effect on U.S. tariffs is ambiguous.[3] (vii) Legal and regulatory news, such as court rulings, is excluded since it is not an announcement made by the U.S. administration. (viii) Foreign retaliatory announcements are treated as a conceptually distinct shock and excluded from the series. (ix) Events happening while the relevant foreign exchange markets are closed are dropped, since no contemporaneous exchange rate reaction can be measured for these.

Applying these rules to the approximately 2,500 keyword-screened headlines leaves a final set of 56 tariff announcement events (listed in Appendix Table C.2), each of which we cross-check against the calendar of scheduled macroeconomic releases to rule out confounding news in the identification window.

High-frequency identification. For each of the 56 retained announcements, we measure the surprise as the log change in the relevant bilateral U.S. dollar exchange rate(s) in a narrow window around the announcement time t:

$$\varepsilon_t^n = \log\left(FX_{n,t+30m}\right) - \log\left(FX_{n,t-10m}\right), \tag{1}$$

where $FX_{n,t}$ is the dollar exchange rate against currency n, expressed in units of currency n per dollar. A positive surprise therefore corresponds to an appreciation of the dollar against the currency of the targeted partner. The window spans ten minutes before to thirty minutes after the announcement. It is narrow enough that other news is unlikely to move exchange rates within it, and wide enough to capture the full market reaction, which may take some time to unfold. In Section 5, we provide a sensitivity check by calculating the surprise series over shorter and longer windows.

We select the exchange rates that best capture the trading partners targeted by each announcement, rather than applying a single currency uniformly across all events. Let N_t denote the number of currencies selected for the announcement at time t. The event-level

[3]For example, on April 9, 2025, Trump announced in the same post an increase in tariffs on China to 125 percent and a 90-day pause of the higher reciprocal rates for most other trading partners.

surprise is the simple average of the bilateral surprises in equation (1):

$$\varepsilon_t = \frac{1}{N_t} \sum_{n=1}^{N_t} \varepsilon_t^n. \tag{2}$$

Consider, as an example, the announcement "Trump says he will put 25% tariffs on Canada and Mexico" (January 30, 2025). We compute the high-frequency surprise separately for USD/CAD and USD/MXN around the announcement time, so that $N_t = 2$ and the event-level surprise is $\varepsilon_t = \frac{1}{2}\left(\varepsilon_t^{\text{CAD}} + \varepsilon_t^{\text{MXN}}\right)$.

When an announcement names no specific country (e.g., "reciprocal tariffs on all trading partners"), we instead use a basket of the largest U.S. trading partners (EUR, MXN, CAD, CNH). When an announcement targets a specific sector rather than a specific country (e.g., steel, semiconductors), we use the currencies of trading partners that account for at least 15 percent of U.S. imports in that sector.[4] Matching currencies to the targeted partners is designed to maximize the signal-to-noise ratio of the surprise. The exchange rate of a country not targeted by the announcement responds to it at most indirectly, so including it would dilute the signal and attenuate the measured surprise toward zero. We then aggregate the event-level surprises to a daily series by summing the surprises of announcements made on the same day and setting days without a qualifying announcement to zero.

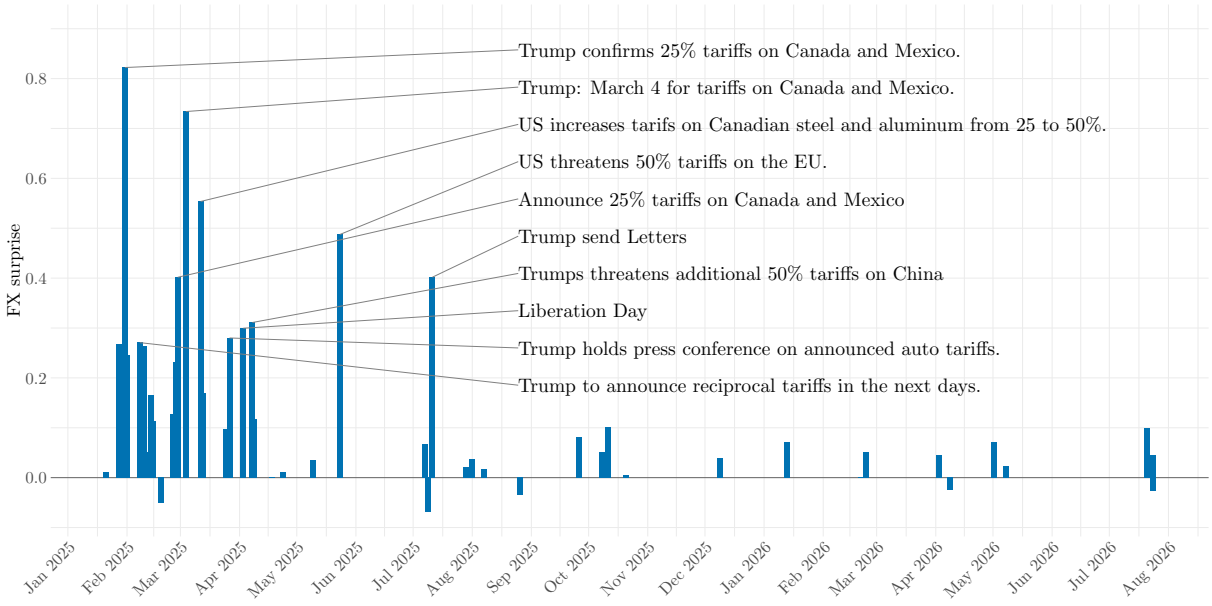
2.3 Diagnostics of the Surprise Series

Narrative evidence. Figure 1 plots the surprise associated with each of the 56 announcements and labels the ten largest. These correspond to key escalation steps of the trade war. The largest is the confirmation, on January 30, 2025, of 25 percent tariffs on Canada and Mexico, the first country-specific tariffs confirmed by the second Trump administration. The second largest is the March 3, 2025 announcement that these tariffs, paused for 30 days in early February, would take effect the following day. Other large surprises include the announced increase in tariffs on Canadian steel and aluminum from 25 to 50 percent in March 2025 and the threat of 50 percent tariffs on the European Union in May 2025. The April 2, 2025 "Liberation Day" announcement of reciprocal

[4] Appendix Table B.1 reports the selected currencies and import shares by sector. The threshold retains only partners for which sector-specific tariff news is plausibly informative, so as not to dilute the surprise with the currencies of weakly exposed countries.

tariffs on nearly all trading partners also ranks among the ten largest surprises, but not at the top. A possible reason is that the plan for reciprocal tariffs had been announced in mid-February, so that part of the April 2 announcement was already anticipated.[5]

Figure 1: The tariff announcement surprise series



Notes: Tariff announcement surprises, ε_t, for each of the 56 narratively identified U.S. tariff announcements over the sample January 2025 to July 2026. The ten largest surprises are labeled.

Background noise. A potential concern with any high-frequency approach is that other, unrelated news might move the identifying exchange rate(s) within the event window, contaminating the surprise. To assess the extent of such background noise, we compare exchange rate changes in the announcement windows with those in a control sample of windows without announcements. For each announcement, we consider the same window, at the same time of the day and on the same weekday, in the surrounding weeks, moving outward one week at a time.[6] In each control window, we compute the change in the same exchange rates used for the corresponding announcement, which yields 294 control observations against 98 announcement observations. As shown in Figure 2,

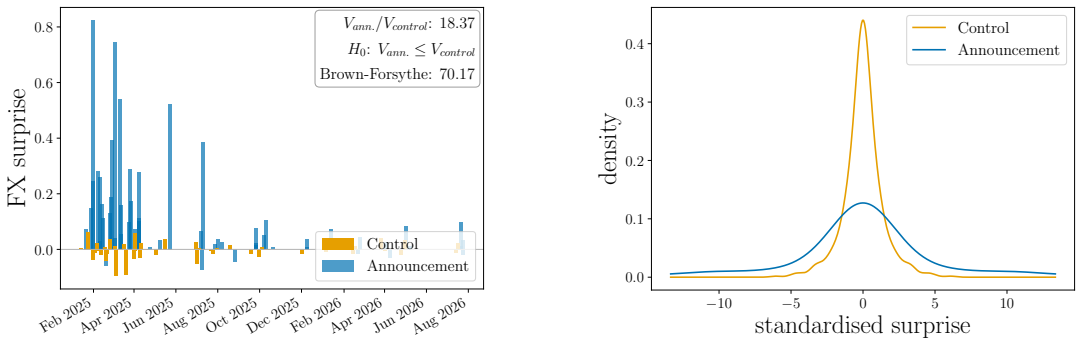
[5]Section 5 shows that our results are robust to excluding the Liberation Day announcement, both on its own and together with all announcements between April 2 and April 8, 2025.

[6]We retain the first three windows that are at least 70 minutes away from any announcement in our sample or other confounding news, do not contain a high-impact macroeconomic release for the United States or the targeted trading partners, and have exchange rate data for all the relevant currencies.

the variance of absolute exchange rate changes, standardized by currency, is 18.37 times larger in announcement windows than in control windows. A Brown–Forsythe test of the null hypothesis that the announcement-window variance is no larger than the control-window variance yields a test statistic of 70.17, strongly rejecting the null. Panel (b) of Figure 2 shows the same pattern: the distribution in announcement windows is far more dispersed and fat-tailed than in control windows, consistent with announcements carrying genuine policy news.

Figure 2: Announcement versus control windows

(a) *Level* **(b)** *Probability density function*



Notes: Panel (a) shows exchange rate surprises in announcement windows and in the corresponding control windows. The box reports the variance ratio and a Brown–Forsythe test of the null hypothesis that the variance in announcement windows is no larger than in control windows. Panel (b) shows the estimated probability density function of standardized surprises in announcement versus control windows using a Gaussian kernel.

Predictability. We next test whether the surprise series can be predicted from past information. Since a valid shock should be unpredictable from lags of the data (Montiel Olea et al., 2025), we consider ten days of lags for the surprise itself, the geopolitical risk index of Caldara and Iacoviello (2022), the financial uncertainty index (VIX), the economic policy uncertainty index of Baker et al. (2016), the trade policy uncertainty index of Caldara et al. (2020), the S&P 500, the dollar index, a daily measure of consumer spending, the 3-month, 1-year and 10-year Treasury yields, 1-year inflation compensation, and the statutory tariff rate. A detailed description of all the data used in this paper is provided in the next section.

For each variable x_t, we estimate the OLS regression $\varepsilon_t = \alpha + \sum_{i=1}^{10} \beta_i x_{t-i} + u_t$ and report the results in Table 1 with Newey–West standard errors in parentheses. Of the 120

coefficients on the lags of the other variables, 8.3 percent are significant at the 10 percent level, 2.5 percent at the 5 percent level and none at the 1 percent level. At all three levels, the share of significant coefficients is below the significance level itself, which is the share expected by chance if the surprise were unpredictable. The surprise is also correlated with its own first and third lags, consistent with the clustering of announcements on consecutive days. The bottom rows of Table 1 report tests that all lags of a variable are jointly zero. Since the asymptotic test over-rejects with few announcements and persistent regressors, we also compute randomization p-values (Young, 2019). Specifically, we shift the surprise by a random number of days relative to the variable 1,000 times, which preserves the time-series properties of both series while breaking any link between them, and compare the observed Wald statistic with its distribution across draws.[7] Under the randomization, among the other variables, only the lags of the S&P 500 and of the 1-year Treasury yield are jointly significant at the 5 percent level ($p = 0.013$ and $p = 0.047$), although none of their coefficients is individually significant. Overall, we find only limited evidence that the surprise is predictable.

[7] When the surprise is unpredictable by construction, the asymptotic test rejects at the 5 percent level in about a quarter of the draws for the tariff rate.

Table 1: Predictability of the raw surprise

Lag	Surprise	GPR	VIX	EPU	TPU	SP500	DXY	Consump.	3M	1Y	10Y	ILS1Y	Tariff
1	8.96***	−4.59	7.79	3.37	−0.19	−55.88	32.96**	−28.65*	29.42	−4.11	−28.48	−17.36	−9.65
	(3.21)	(3.63)	(8.71)	(2.51)	(4.52)	(41.24)	(16.46)	(14.89)	(29.62)	(18.68)	(17.40)	(14.72)	(6.40)
2	4.57	4.23	−4.02	1.96	−1.76	40.27	1.85	−15.30	−65.84	20.37	31.43	47.44*	51.86*
	(4.27)	(3.33)	(8.20)	(4.03)	(4.78)	(39.33)	(29.63)	(26.38)	(46.80)	(22.01)	(24.18)	(25.46)	(30.41)
3	−3.49**	0.43	17.01	2.26	10.07	−44.40	5.02	16.05	−33.71	−46.13	−30.81	−45.96	−9.95
	(1.72)	(4.35)	(14.36)	(3.17)	(9.51)	(59.85)	(29.84)	(31.51)	(42.37)	(33.09)	(24.24)	(28.48)	(14.04)
4	5.79	1.24	8.24	−2.30	1.18	−55.39	−17.48	31.37	93.33	20.12	29.21	65.12*	−37.21*
	(6.57)	(2.66)	(8.34)	(2.22)	(5.01)	(49.43)	(35.83)	(34.82)	(58.36)	(30.63)	(24.36)	(35.55)	(21.85)
5	3.27	−8.04*	−14.83	1.31	−1.67	47.89	−36.02	−28.22	−21.83	−34.57	−22.24	−47.57	5.87
	(3.07)	(4.23)	(10.11)	(3.64)	(5.83)	(41.64)	(35.09)	(37.61)	(40.34)	(25.40)	(23.42)	(44.97)	(23.92)
6	−3.72	3.57	−6.11	−3.40	10.71**	22.22	−17.01	7.08	−21.77	14.84	−1.39	−13.99	−2.83
	(2.83)	(3.02)	(7.51)	(2.31)	(4.25)	(33.54)	(47.18)	(10.65)	(49.57)	(21.52)	(15.06)	(24.37)	(17.07)
7	4.30	8.11*	−3.98	0.72	−3.10	32.40	7.71	−15.06	14.05	24.13	29.91	38.20	−5.36
	(4.27)	(4.53)	(4.52)	(1.77)	(4.49)	(30.40)	(19.80)	(14.04)	(37.17)	(17.14)	(19.44)	(30.31)	(12.34)
8	11.54	−0.17	2.48	1.18	−10.50	−3.14	38.13	17.07	20.96	2.33	−18.58	−11.90	2.91
	(7.77)	(5.08)	(7.28)	(3.93)	(6.98)	(30.48)	(39.65)	(25.61)	(59.66)	(24.52)	(21.18)	(18.75)	(5.25)
9	−1.25	−9.52	−6.34	0.03	6.90	23.67	−34.74	−7.94	72.19	28.59	24.64	−11.75	3.76
	(3.36)	(6.09)	(6.71)	(4.23)	(7.89)	(30.10)	(49.32)	(19.41)	(57.80)	(25.37)	(20.60)	(24.95)	(10.02)
10	3.44	−1.51	0.75	−0.94	−6.39	−19.65	40.59	18.79	−74.96	−11.98	−7.94	−2.95	−14.63**
	(5.68)	(2.83)	(4.20)	(2.26)	(5.84)	(24.66)	(38.30)	(16.24)	(46.14)	(14.04)	(13.44)	(20.87)	(5.95)
Joint test p (asymptotic)	0.000	0.229	0.077	0.716	0.344	0.004	0.120	0.347	0.196	0.069	0.662	0.410	0.010
Joint test p (randomization)	0.026	0.184	0.101	0.908	0.347	0.013	0.065	0.293	0.252	0.047	0.819	0.439	0.180
R^2	0.068	0.023	0.031	0.007	0.025	0.063	0.095	0.038	0.034	0.050	0.032	0.012	0.066
N	567	567	566	567	567	567	567	567	566	566	566	567	567

Notes: Each column reports the coefficients ($\times 10^5$) on ten lags of the corresponding variable, standardized to unit variance. Newey–West standard errors (10 lags) in parentheses. Significance levels: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$. Joint test p: p-value of the Wald test that the ten coefficients are jointly zero, from the χ^2_{10} distribution (asymptotic) or from 1,000 circular shifts of the surprise by at least 30 days (randomization; random permutations across dates in the Surprise column). GPR: geopolitical risk; EPU: economic policy uncertainty; TPU: trade policy uncertainty; DXY: U.S. Dollar Index; ILS1Y: 1-year inflation swap rate. Sample: January 1, 2025 to July 31, 2026.

To address any remaining concern, Section 5 shows that our results are robust to controlling for all the lags that are individually significant in Table 1, including those of the surprise itself. Once the surprise is purged of their predictive content, no variable is jointly significant under the randomization (Appendix Table D.1).

3 Empirical Strategy

In this section, we first describe the data used in the paper, and then lay out the framework used to estimate the dynamic macroeconomic effects of tariff announcements and the extension to quantify the pass-through of tariffs into retail prices.

3.1 Data

The data used in this paper are listed in Appendix Table A.1, with their sources, identifiers, and transformations. All series are daily and cover January 1, 2025 to July 31, 2026, except for the retail price indexes, which are available only until April 14, 2026.

We measure the statutory tariff rate using the Trade War Tracker from Waugh (2025). The tracker measures the daily average tariff on U.S. imports implied by the tariffs legally in force on each day, built up from individual products.

We use daily imported and domestic retail price indexes constructed by Cavallo et al. (2026) and available from the Harvard Pricing Lab. These indexes are constructed starting from daily product-level prices collected from the online stores of five large U.S. multichannel retailers and cover over 80 percent of the commodities component of the CPI, including furnishings, household goods, electronics, and food. Although we use prices collected online, prior work shows that those prices closely co-move with offline prices within large retail chains (Cavallo, 2017; Della Vigna and Matthew, 2019).

We obtain a daily measure of consumer spending launched by Bloomberg to provide a near-real-time view of U.S. consumer spending. The index is constructed from billions of credit and debit card transactions, aggregated across thousands of merchants and spending categories, from a panel of more than 20 million U.S. consumers.

The additional variables used in the paper are standard. We use the S&P 500 index and the U.S. Dollar Index, which measures the exchange rate of the U.S. dollar against a basket of six major currencies (the euro, yen, pound sterling, Canadian dollar, Swedish krona, and Swiss franc). We also use government bond yields at different maturities (from 3-month to 30-year) and the 1-year inflation-linked swap rate, a market-based measure of inflation compensation. Finally, we use the following series of uncertainty indicators: the financial uncertainty index (VIX), trade policy uncertainty index (Caldara et al., 2020), economic policy uncertainty index (Baker et al., 2016), and geopolitical risk index (Caldara and Iacoviello, 2022).

3.2 Econometric Methodology

High-frequency event study. We examine how the S&P 500 responds to tariff announcements within the same narrow window used to construct the surprise, using the

high-frequency event-study framework of Gürkaynak and Wright (2013).[8] Analogously to equation (1), we define the stock market surprise ε_t^{SP} as the log change in the S&P 500 from ten minutes before to thirty minutes after announcement t, and estimate by OLS across announcements the following regression

$$\varepsilon_t^{SP} = c + \beta\, \varepsilon_t + u_t, \tag{3}$$

where ε_t is the tariff surprise of equation (2), standardized to have unit standard deviation across the announcements in the sample. Because both surprises are measured over the same narrow window, the regression differences out any news released outside the window on both sides of the equation, and the diagnostics in Section 2.3 indicate that exchange rate movements within the window are dominated by the announcement itself. Since the S&P 500 is traded only during regular U.S. market hours, we restrict the sample to the 26 announcements whose entire window falls between 9:30 and 16:00 ET. Given the small number of observations, we report heteroskedasticity-robust standard errors with a small-sample correction (HC3),[9] and complement them with a permutation test that randomly reassigns the surprises across announcements.

Local projections. The event study captures only the immediate response of variables observed at intraday frequency. To study a wider range of outcomes, and to trace the dynamic response, we use daily local projections. For each outcome variable y_t and horizon h, we estimate

$$y_{t+h} = \alpha_h + \beta_h\, \varepsilon_t + \Gamma_h Z_{t-1} + u_{t,h}, \tag{4}$$

where ε_t is the surprise series of Section 2.2, divided by its standard deviation across announcement days, and Z_{t-1} contains 30 lags of the dependent variable. The coefficient β_h is thus the response of y at horizon h to a one-standard-deviation surprise on an announcement day. Standard errors are computed with the Newey–West estimator, with a bandwidth equal to the horizon h. We estimate equation (4) separately for each horizon up to five months, with $h = 0, 1, 2, \ldots, 150$ calendar days, and plot the resulting

[8] Over our sample, minute-level data are available to us only for exchange rates and the S&P 500, which is why the event study focuses on the latter.

[9] HC3 standard errors (MacKinnon and White, 1985) rescale each squared residual by $(1-h_t)^{-2}$, where h_t is the leverage of announcement t, which corrects the downward bias of conventional heteroskedasticity-robust standard errors in small samples. Long and Ervin (2000) recommend their use in samples with few observations.

sequence of estimates $\hat{\beta}_h$ together with 68 and 90 percent confidence bands. We estimate impulse responses using local projections rather than a VAR because, with daily data and horizons up to 150 days, any feasible lag length is likely to misspecify the joint dynamics of the many outcomes we consider. Local projections are robust to such misspecification. Their confidence intervals retain correct coverage, whereas VAR intervals with short-to-moderate lag lengths can severely undercover (Montiel Olea et al., 2026).

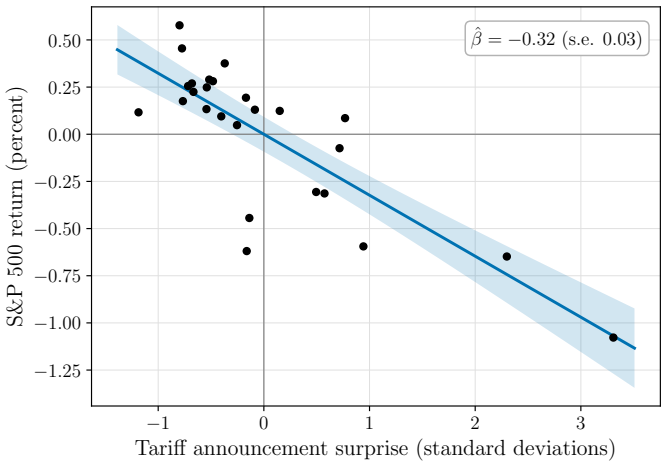
4 Results

In this section, we present our main results. We first present a high-frequency event study, reporting the response of the S&P 500 to tariff announcements within the narrow event window. We then turn to the dynamic response of the statutory tariff rate and of imported and domestic retail prices, and quantify the corresponding pass-through into retail prices. Finally, we study the broader transmission of these shocks to consumer spending, financial markets, various measures of uncertainty, and the yield curve.

4.1 High-Frequency Response of the Stock Market

Figure 3 shows the return of the S&P 500 in the event window against the tariff announcement surprise for the 26 announcements whose event window falls within regular U.S. trading hours, together with the fitted line from equation (3). Both variables are demeaned across these announcements. Announcements that appreciate the dollar against the currencies of the targeted partners are associated with an immediate decline in equity prices. A one-standard-deviation surprise lowers the S&P 500 by 0.32 percent within the 40-minute window, an effect that is statistically significant at all conventional levels. The surprise alone explains about two thirds of the variation in equity returns across announcements ($R^2 = 0.66$). A permutation test confirms this result. When we randomly reassign the surprises across announcements 20,000 times and re-estimate the slope, none of the resulting slopes is as large in absolute value as the estimated one (Appendix Figure E.2). The estimate is also robust to dropping one announcement at a time, with slopes ranging from -0.34 to -0.31, and to excluding the two largest surprises, which yields a slope of -0.35 (Appendix Figure E.1). Given the small number of announcements, we view this evidence as suggestive. It nevertheless shows that the surprise captures news that equity markets price as adverse.

Figure 3: S&P 500 response to tariff announcement surprises



Notes: OLS estimate of equation (3) across the 26 announcements whose event window falls within U.S. trading hours, with the 95 percent confidence band based on HC3 standard errors. Each dot is an announcement. The surprise is in standard deviations and the S&P 500 return in percent, both demeaned.

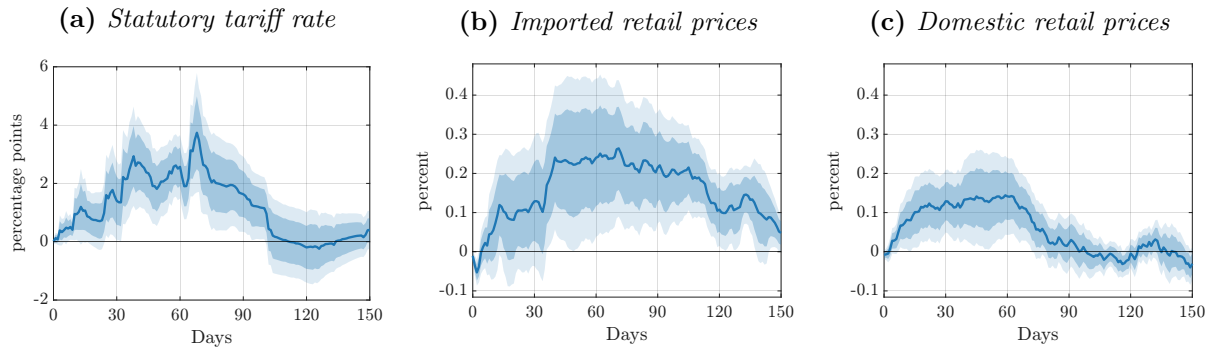
4.2 The Statutory Tariff Rate and Retail Prices

We now turn to the dynamic effects of tariff announcements, estimated using daily local projections of equation (4). The estimation uses all 56 tariff announcement surprises identified in Section 2.2, which fall on 47 distinct days. Figure 4 presents the baseline results for three main outcomes: the statutory tariff rate (panel a), imported retail prices (panel b), and domestic retail prices (panel c). A one-standard-deviation tariff announcement shock raises the statutory tariff rate within a few days, and it increases steadily until it peaks at roughly 4 percentage points at the beginning of the third month. The statutory tariff rate then gradually reverts, returning to its pre-shock level around the middle of the fourth month. This transitory response is consistent with the nature of many individual tariff actions in this episode, a number of which were subsequently paused, renegotiated, or partially reversed following their initial announcement.

Imported retail prices rise persistently following the tariff announcement shock. The response builds up over the first 40 days and then plateaus at around 0.20 to 0.25 percent until the middle of the fourth month, before reverting toward the end of the horizon. Domestic retail prices follow a similar pattern, but with a smaller peak of around 0.14 percent. They also revert much faster than imported prices, declining from the third month and returning to their pre-shock level by the start of the fourth.

The transmission of tariffs to retail prices is also consistent with the perceptions of U.S. voters. In a recent Cato Institute survey of registered voters, 74 percent of respondents report that the tariffs introduced by the Trump administration have increased the prices of goods they buy at the store, a view shared across political affiliations (Cato Institute, 2026).[10]

Figure 4: Impulse responses to a tariff announcement shock



Notes: Impulse responses of the statutory tariff rate and of imported and domestic retail prices to a one-standard-deviation tariff announcement surprise, estimated with the local projections in equation (4). Shaded areas are 68 and 90 percent confidence bands based on Newey–West standard errors.

We view the rise in domestic retail prices as consistent with strategic complementarities in price setting (Amiti et al., 2019a). When tariffs raise the price of imported goods, domestic producers competing with those imports face weaker competition and may find it optimal to raise their own prices, even if their costs are not directly affected by the tariff. Two other channels may also contribute: higher costs of imported intermediate inputs used in domestic production, and price adjustments by domestic firms in response to higher expected inflation.

Tariff pass-through. To quantify the pass-through of tariffs into retail prices directly, we estimate the following two-stage least squares (2SLS) local projection

$$\ln(P_{i,t+h}) - \ln(P_{i,t-1}) = PT_{h,i} \cdot \frac{1}{h+1} \sum_{k=0}^{h} \ln(1+\tau_{t+k}) + \gamma_h Z_{t-1} + u_{i,t+h}, \tag{5}$$

[10]The Cato 2026 Fall Trade and Populism National Survey surveyed 4,150 registered voters, of whom 42 percent identify as Republican, 47 percent as Democrat, and 11 percent report being unsure.

where $P_{i,t}$ is the retail price index, with $i \in \{\text{imported}, \text{domestic}\}$, τ_t is the statutory tariff rate, and $PT_{h,i}$ is the parameter of interest. It captures the percent change in the price level per percent increase in the horizon-averaged gross tariff rate. The set of controls Z_{t-1} collects 30 lags each of the tariff rate and of the domestic and imported price indexes, the same set for both equations so that $PT_{h,\text{dom}}$ and $PT_{h,\text{imp}}$ are directly comparable.[11] To identify $PT_{h,i}$, we instrument the average tariff rate, $\frac{1}{h+1}\sum_{k=0}^{h}\ln(1+\tau_{t+k})$, using our tariff announcement surprise series ε_t. We report both conventional Wald confidence intervals and weak-instrument-robust confidence sets following Andrews (2018), the latter of which remain valid even if the instrument is weak at a given horizon.[12]

Figure 5 shows the pass-through estimates $\widehat{PT}_{h,i}$ from equation (5) across horizons, together with Wald confidence intervals and weak-instrument-robust confidence sets.

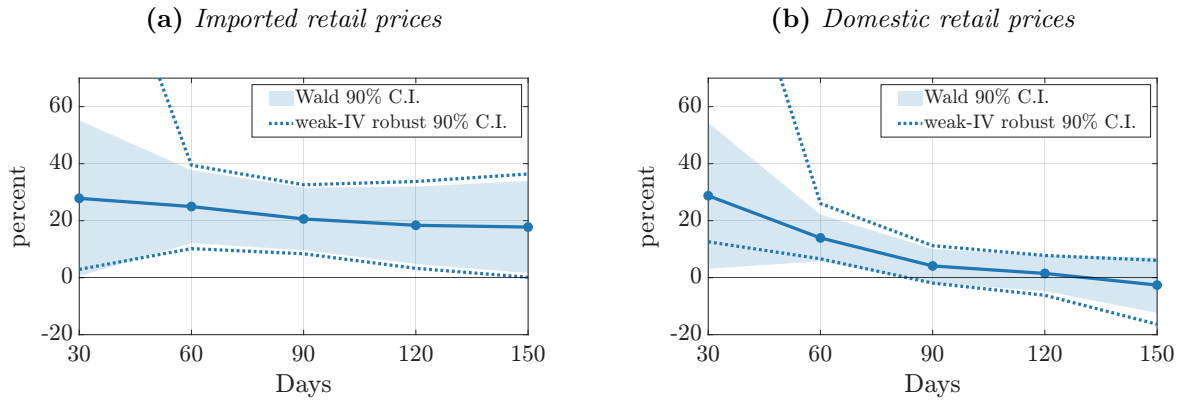
At the one-month horizon, both the Wald interval and the weak-instrument-robust confidence set exclude zero, so that pass-through is positive and statistically significant for both price indexes. The robust set, however, extends to very large values, up to 147 percent for imported prices and unbounded above for domestic prices (truncated at 150 percent in the figure). At this horizon, the instrument is therefore not strong enough to pin down the size of the pass-through, and we focus on the second month onward, where the two intervals closely agree. Close agreement between the two suggests that our instrument is not weak.

Pass-through into imported retail prices is economically large and stable at around 20 percent from the second to the fifth month, remaining statistically distinct from zero under both the Wald and the weak-instrument-robust confidence sets throughout this window. Pass-through into domestic retail prices is smaller and short-lived: it reaches 14 percent in the second month, then becomes statistically indistinguishable from zero from the third month onward, mirroring the faster reversion of the domestic price response documented in Figure 4.

[11] Appendix Figure E.3 shows that the impulse responses of Figure 4 are virtually unchanged when each local projection controls for this same set of variables, namely 30 lags of the tariff rate and of the imported and domestic price indexes.

[12] The robust confidence sets are computed with the Stata command `twostepweakiv` (Sun, 2018), by test inversion over a grid of 500 points.

Figure 5: Tariff pass-through to retail prices



Notes: Pass-through estimates $\widehat{PT}_{h,i}$ from the 2SLS local projections in equation (5), with the horizon-averaged tariff rate instrumented by the tariff announcement surprise. The shaded area is the 90 percent Wald confidence interval based on Newey–West standard errors, and the dotted lines delimit the 90 percent weak-instrument-robust confidence set of Andrews (2018). For domestic prices, the robust set is truncated at 150 percent.

Comparison with existing estimates. Our estimates are considerably larger than those in the existing literature on the current trade war, which identifies pass-through from cross-sectional variation in tariff exposure across products. Using the same retail price data, Cavallo et al. (2026) estimate a pass-through of 6 percent for tariff-affected goods, comparing them with non-affected goods within narrow product categories, net of sectoral trends. The two estimates, however, measure different objects, as comparing affected with non-affected goods differences out any effect common to all goods. This is the so-called missing-intercept problem (Guren et al., 2020; Wolf, 2023). Our estimate instead relies on time-series variation and therefore measures the response of the aggregate price index, incorporating all general equilibrium effects. Two pieces of evidence in this paper suggest that the common component is sizable. First, domestic prices rise as well, consistent with spillovers to goods not directly targeted by the tariff, for instance through higher costs of imported inputs or reduced competition from abroad. Second, the dollar depreciates following a tariff announcement (Figure 6), so that the exchange rate amplifies rather than offsets the effect of the tariff on import prices. Both channels also affect goods not directly targeted by the tariff and are therefore not captured in cross-sectional comparisons.

Equation (5) expresses pass-through with respect to the statutory tariff rate τ_t. The tariffs actually collected by the U.S. were substantially lower, reflecting shipment lags,

exemptions, and incomplete enforcement (see Gopinath and Neiman, 2026). Collected tariffs are not available at daily frequency, but the Trade War Tracker of Waugh (2025) reports a monthly collected rate, computed as customs duties over the value of imports, and over our sample the statutory rate averaged about 1.66 times this rate. Rescaling by this factor puts the pass-through of the applied tariff rate into imported prices at 30 to 41 percent between the second and the fifth month. This rescaled figure is reasonably close to, albeit somewhat above, the 25 percent pass-through that Cavallo et al. (2026) obtain when using the applied rather than the statutory tariff rate. The remaining gap is consistent with the general equilibrium effects discussed above.

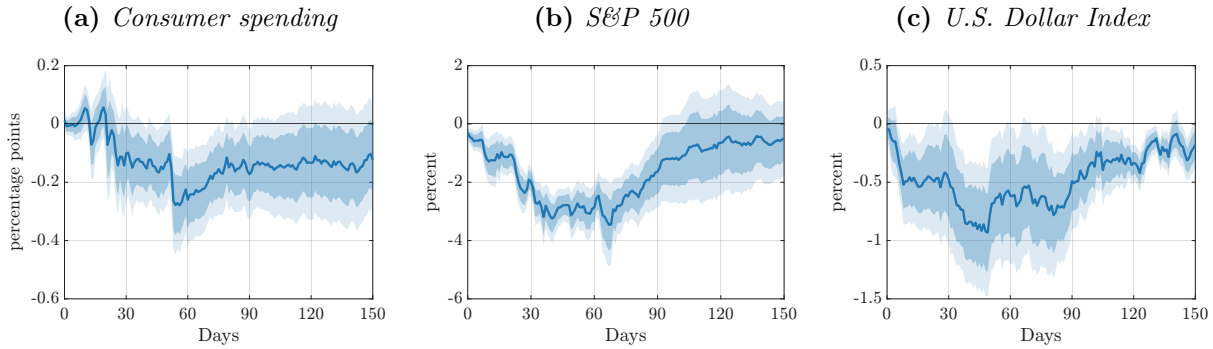
4.3 Broader Transmission

To understand how tariff announcement surprises transmit through the broader economy, we examine their effects on consumer spending and financial markets, on various measures of uncertainty, and on the government bond term structure, together with inflation expectations and the real rate.

Consumer spending and financial markets. Figure 6 reports the response of consumer spending, the S&P 500, and the Dollar Index. Consumer spending is measured by the Bloomberg Second Measure U.S. Consumer Spend Index described in Section 3.1. Since the index measures the year-over-year growth rate of consumer spending, its response is in percentage points. The S&P 500 and Dollar Index are expressed as log changes, so that their responses are directly interpretable in percent. Consumer spending falls by about 0.28 percentage points, with a trough at the end of the second month, and the decline is statistically significant from the beginning of the second month to the end of the third. The S&P 500 declines gradually, troughing at around 3.5 percent at the beginning of the third month, and reverting by the fourth month. Lastly, the dollar depreciates by about 0.9 percent, troughing in the second month and remaining depressed throughout. Of these responses, the U.S. dollar depreciation is at odds with the standard open-economy prediction that a tariff should, all else equal, appreciate the currency of the tariff-imposing country through an improvement in the trade balance. It is, however, consistent with Ostry et al. (2025), who document that the dollar appreciates in response to unilateral U.S. tariff actions but depreciates when they are met with retaliatory threats, as was the case for nearly all U.S. tariff actions in our sample. This pattern accords

with open-economy models with dominant currency pricing, in which tariffs met with retaliation induce depreciation of the dominant currency (Bergin and Corsetti, 2023). The depreciation also implies that the exchange rate does not absorb part of the tariff, as standard models predict, removing a channel that would otherwise dampen its effect on import prices. We interpret this depreciation as evidence that markets price tariff announcements primarily as negative news about U.S. growth and policy credibility, consistent with the simultaneous decline in spending and equity prices.

Figure 6: Consumer spending, equities, and the dollar



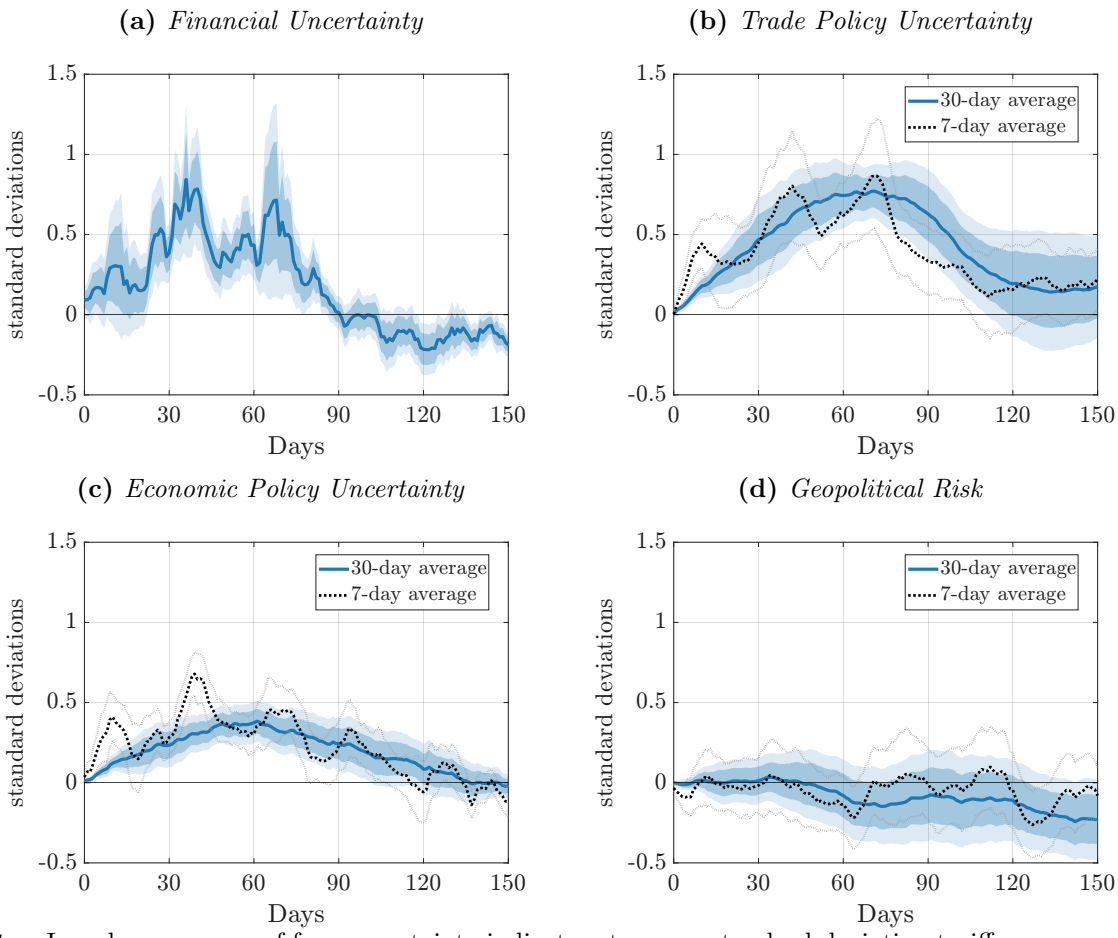
Notes: Impulse responses of consumer spending, the S&P 500, and the U.S. Dollar Index to a one-standard-deviation tariff announcement surprise, estimated with the local projections in equation (4). Shaded areas are 68 and 90 percent confidence bands based on Newey–West standard errors.

Uncertainty. The trade war started by the U.S. in 2025 has been marked by high uncertainty, as announcements, retaliations, and de-escalations followed one another in rapid and often unpredictable succession. We therefore examine whether tariff announcements raise uncertainty, which type of uncertainty they affect, and how persistent the effect is.

Figure 7 reports the responses of four uncertainty indicators: financial uncertainty (VIX), the trade policy uncertainty index of Caldara et al. (2020), the economic policy uncertainty index of Baker et al. (2016), and the geopolitical risk index of Caldara and Iacoviello (2022). We report the responses of the standardized indexes for ease of comparison across them. All indicators except geopolitical risk rise sharply following a tariff announcement surprise, with the VIX and trade policy uncertainty rising by comparable amounts, peaking at around 0.8 to 0.9 standard deviations, somewhat more than economic policy uncertainty, which peaks at about 0.4 to 0.7 standard deviations. All three measures revert toward their pre-announcement levels by the end of the horizon, consistent with the transitory statutory tariff rate response documented above. Geopolitical risk,

by contrast, does not respond, indicating that the tariff announcement surprise captures trade policy news rather than broader geopolitical tensions. These responses also help interpret the decline in consumer spending in Figure 6. Uncertainty rises immediately after the announcement, while consumer spending declines significantly only from the second month. This timing is consistent with households postponing purchases in response to higher uncertainty (Coibion et al., 2024).

Figure 7: Uncertainty indicators

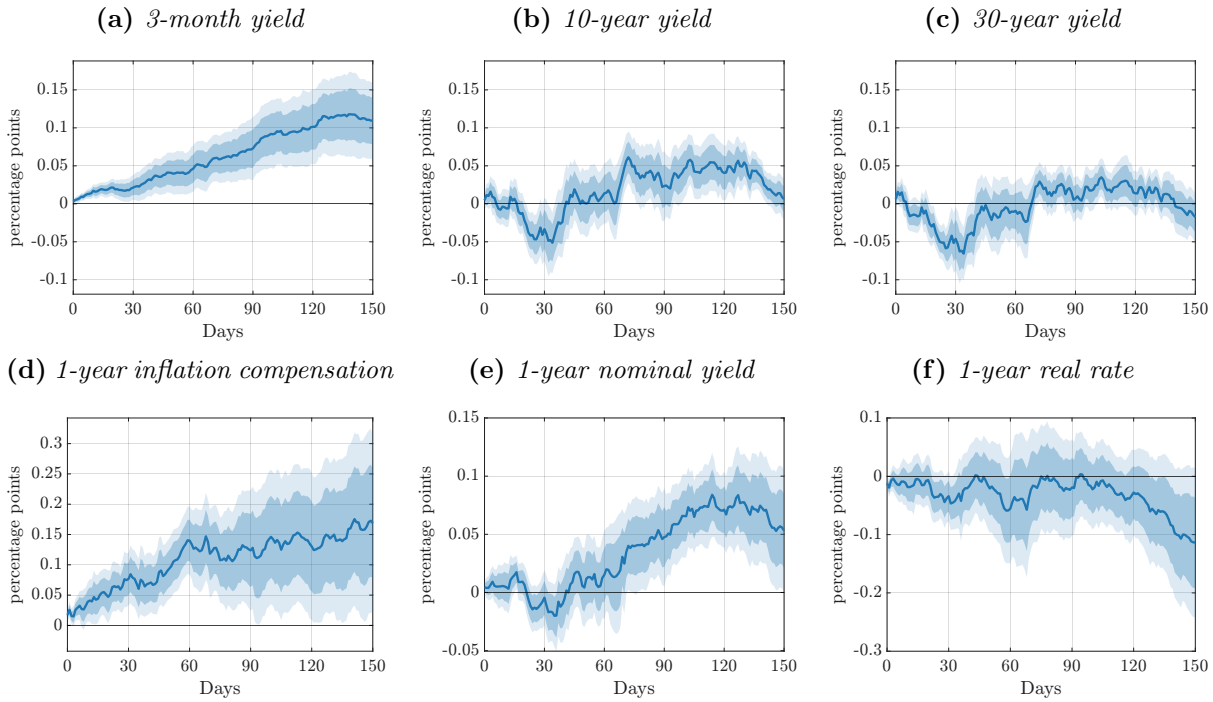


Notes: Impulse responses of four uncertainty indicators to a one-standard-deviation tariff announcement surprise, estimated with the local projections in equation (4). Shaded areas are 68 and 90 percent confidence bands based on Newey–West standard errors. In panels (b) to (d), the solid line is the response of the 30-day moving average of the index, and the black dotted line, with its 90 percent confidence band in gray, is the response of the 7-day moving average.

The term structure and the real rate. Figure 8 plots the responses of the 3-month, 10-year, and 30-year Treasury yields, together with the decomposition of the 1-year nominal yield into inflation compensation and the real rate. The 3-month yield rises steadily, by about 0.1 percentage points after four months. Longer-term yields instead fall during the first month, by about 0.05 and 0.07 percentage points for the 10-year and 30-year yields, and revert in the third month. The 10-year yield then turns positive, while the 30-year yield remains closer to zero. Overall, we observe a flattening of the term structure.

The 1-year decomposition helps interpret the response at the short end. Inflation compensation, measured using the inflation-linked swap, rises immediately and persistently, by about 0.15 percentage points after four months. The 1-year nominal yield instead moves little in the first two months and rises by less than inflation compensation afterwards. The implied 1-year real rate therefore declines. Markets thus price higher inflation but not a tighter real stance of monetary policy, consistent with the Federal Reserve being

Figure 8: The government bond term structure and the real rate



Notes: Impulse responses of Treasury yields and of the 1-year rate decomposition to a one-standard-deviation tariff announcement surprise, estimated with the local projections in equation (4). Inflation compensation is the 1-year inflation-linked swap rate, and the real rate is the 1-year nominal yield minus inflation compensation. Shaded areas are 68 and 90 percent confidence bands based on Newey–West standard errors.

expected to look through the tariff-induced rise in prices. This interpretation should, however, be taken with caution, as the decline in the real rate is not statistically significant throughout the impulse response horizon.

5 Sensitivity Analysis

In this section, we assess the robustness of our results along five dimensions: the influence of individual announcements and of the Liberation Day episode, the predictable component of the surprise, the event window used to measure the surprise, and the set of announcements.

Jackknife. A narrative surprise series built from a modest number of events raises an obvious concern: results could be an artifact of one or two large announcements rather than a general pattern. We address this directly by re-estimating equation (4) each time setting the surprise on one of the 47 announcement days to zero, for each of the twelve outcomes examined in Section 4. Appendix Figure E.4 reports the resulting leave-one-out paths alongside the baseline. They cluster tightly around the baseline throughout. Even the single most influential event to drop, which for ten of the twelve outcomes is the January 30, 2025 announcement confirming 25 percent tariffs on Canada and Mexico, never moves the estimate outside the baseline 90 percent band. Therefore, we conclude that no single announcement drives our results.

Liberation Day. The jackknife exercise drops one announcement day at a time, but the announcements around the April 2, 2025 "Liberation Day" came in rapid succession, from the announcement of the reciprocal tariffs on April 2 to the escalation of tariffs on China in the following days. Appendix Figure E.5 re-estimates equation (4) setting the surprise to zero on all three announcement days between April 2 and April 8, 2025. The responses lie within the baseline 90 percent band at all horizons for all twelve outcomes, so our results are not driven by this episode.

Controlling for the predictable component of the surprise. Section 2.3 shows that we cannot reject that the surprise is unpredictable, but that a few lagged variables have individually significant coefficients. Montiel Olea et al. (2025, Section 4.1) recommend choosing the controls of a local projection such that the shock, net of the controls,

cannot be predicted from lagged data. We therefore add to equation (4) as controls all the lags that are significant, at any level, in Table 1, with a total of twelve regressors. We include only the significant lags rather than all lags of these variables, which would add more than one hundred regressors for 47 announcement days and absorb genuine variation in the surprise along with noise. Appendix Figure E.6 reports the result. The responses of the tariff rate, retail prices and the dollar stay within the baseline 90 percent band at nearly all horizons, and that of consumer spending at about three quarters of them. The responses of stock prices and trade policy uncertainty are smaller but keep their sign and remain statistically significant. The only response that loses statistical significance is that of the 3-month yield, which is no longer significant at most horizons.

Event window. Our baseline surprise measures the change in the exchange rate from ten minutes before to thirty minutes after each announcement. Appendix Figures E.7 and E.8 re-estimate equation (4) with the surprise measured over a narrower window, from ten minutes before to twenty minutes after the announcement, and over a wider one, from twenty minutes before to forty minutes after. Both alternative series have a correlation of about 0.97 with the baseline, and the resulting responses lie within the baseline 90 percent band at all horizons for all twelve outcomes.

Announcements through August 2025. Most of the escalation of the trade war took place in the first eight months of 2025, up to the entry into force of the reciprocal tariffs in August. Appendix Figure E.9 re-estimates equation (4) using only the 32 announcement days up to August 31, 2025, setting the surprise to zero afterwards, while keeping the outcome sample unchanged so that the responses to these announcements are traced over the full horizon. The responses lie within the baseline 90 percent band at all horizons for all twelve outcomes, so the effects we document are identified from the main escalation phase of the trade war alone.

6 Conclusion

This paper provides new evidence on the macroeconomic effects of tariff announcements in the trade war initiated by the second Trump Administration. Combining narrative and high-frequency identification, we identify 56 U.S. tariff announcements from breaking-

news headlines and measure their surprise component from the reaction of the exchange rates of the targeted trading partners within minutes of each announcement.

Tariff announcements are inflationary and contractionary. A one-standard-deviation surprise raises the statutory tariff rate by about 4 percentage points and retail prices within weeks, by 0.20 to 0.25 percent for imported goods and about 0.15 percent for domestic ones. Consumer spending and equity prices fall, uncertainty rises, and the rise in short-term yields is entirely accounted for by inflation compensation.

We provide the first estimate of tariff pass-through during the current trade war based on time-series variation. Our estimates imply a pass-through of about 20 percent of the statutory tariff into imported retail prices, or 30 to 41 percent of the effective tariff rate. Unlike estimates based on cross-sectional variation across products, ours account also for general equilibrium effects. One example is the response of the dollar. Contrary to the prediction of standard models, it depreciates in the days following a tariff announcement, so that the exchange rate amplifies rather than absorbs the effect of the tariff on import prices. This depreciation is consistent with markets interpreting tariff announcements as adverse news about U.S. growth, in line with the decline in consumer spending and equity prices.

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Online Appendix

The Macroeconomic Effects of Tariff Announcements

November 13, 2026

Alessandro Franconi, Louise Gatty, and Lukas Hack

Appendix A Data sources

Table A.1 lists every series used in the paper, with its source, identifier and transformation. All series are daily and the sample runs from January 1, 2025 to July 31, 2026, except for the imported and domestic retail price indexes, whose sample ends on April 14, 2026.

Table A.1: Data sources

Variable	Source	Identifier	Unit and transformation
Statutory tariff rate	Trade War Tracker (Waugh, 2025)	All countries	Percent
Imported retail price index	Harvard Pricing Lab, Tariff Tracker (Cavallo et al., 2026)	index_imported_JAN	Index; log
Domestic retail price index	Harvard Pricing Lab, Tariff Tracker (Cavallo et al., 2026)	index_domestic_JAN	Index; log
Household consumption	Bloomberg Second Measure U.S. Consumer Spend Index	–	Percentage points
S&P 500	Bloomberg	`SPX Index` (`PX_LAST`)	$100 \times$ log(index), percent
U.S. Dollar Index	Bloomberg	`DXY Curncy` (`PX_LAST`)	$100 \times$ log(index), percent
Treasury yields (3M, 6M, 1Y, 2Y, 5Y, 10Y, 30Y)	Board of Governors of the Federal Reserve System (H.15) / FRED	`DGS3MO`, `DGS6MO`, `DGS1`, `DGS2`, `DGS5`, `DGS10`, `DGS30`	Percent
Inflation-linked swaps (1Y, 2Y, 5Y, 10Y, 30Y, 45Y)	Bloomberg	`USSWIT1`, `USSWIT2`, `USSWIT5`, `USSWIT10`, `USSWIT30`, `USSWIT45` `Curncy` (`PX_LAST`)	Percent
VIX	Chicago Board Options Exchange / FRED	`VIXCLS`	Standard deviations
Trade policy uncertainty	Trade Policy Uncertainty webpage (Caldara et al., 2020)	Daily TPU index	Standard deviations

Variable	Source	Identifier	Unit and transformation
Economic policy uncertainty	Economic Policy Uncertainty website (Baker et al., 2016)	U.S. Daily EPU index	Standard deviations
Geopolitical risk	Geopolitical Risk Uncertainty webpage (Caldara and Iacoviello, 2022)	Daily GPR index	Index points

Appendix B Currency-sector proxy table

Table B.1: Currencies used to proxy each sector's trade exposure

Sector	Curr. (≥15%)	Share (%)	Ref. year
Pharma	EUR	35	2024/25
Copper	CLP, CAD	65, 17	2025
Lumber	CAD	75	2024
Aluminium	CAD	56	2025
Steel	CAD, BRL	18, 16	2025
Gold	CAD, MXN	27, 20	2021–24
Oil	CAD	63	2025
Energy	CAD	48	2021
Technology	EUR, TWD, MXN	24, 17, 15	2025
Cars / trucks	MXN	38	2024
Semiconductors	MYR, TWD	22, 15	2021
Chemicals	EUR	24	2024
Potash	CAD	79	2024
Furniture	CNH, MXN	21, 20	2025
Agri. products	MXN, CAD, EUR	21, 19, 15	2025
Digital taxes	GBP, EUR	—	—

Notes: Illiquid currencies are dropped from the relevant basket.

Appendix C Tariff announcement events

Table C.1: Keywords used to screen LSEG breaking-news headlines

Group	Keywords
U.S.-related	*White House*, *Trump**, *Donald Trump*, *Donald J. Trump*, *U.S.*, *US*, *US President*, *U.S. President*.
Trade-related	*Tariff**, *duties*, *Retaliatory Tariff**, *retaliation*, *retaliate*, *trade war*, *counter-tariff**, *reciprocal trade*.

Notes: A headline is retained if it contains at least one keyword from each group. An asterisk denotes any word ending (e.g., *Tariff** matches *tariff*, *tariffs* and *tariffed*).

Table C.2: Tariff announcement events

No.	Date/time (ET)	Announcement detail
1	20/01/2025 20:25	Trump threatens tariffs on the EU.
2	27/01/2025 18:20	Trump announces tariffs on computer chips, pharmaceuticals, aluminum, steel, and copper.
3	30/01/2025 15:37	Trump confirms 25% tariffs on Canada and Mexico.
4	31/01/2025 13:20	Trump confirms 10% tariffs on China.
5	07/02/2025 10:53	Trump to announce reciprocal tariffs in the next days.
6	09/02/2025 16:26	Trump announces 25% tariffs on steel and aluminum.
7	10/02/2025 17:37	Trump to announce tariffs on cars, pharmaceuticals, and computer chips.
8	13/02/2025 06:48	US charges reciprocal tariffs.
9	14/02/2025 14:40	Trump specifies the date for auto tariffs: April 2.
10	18/02/2025 16:18	Trump specifies the rate for auto tariffs: around 25%
11	24/02/2025 15:20	Trump to announce further tariffs.
12	26/02/2025 12:32	Trump to specify tariffs on the EU shortly.
13	27/02/2025 08:47	Negotiations with Canada and Mexico have failed: announced 25% tarrifs will be implemented.
14	27/02/2025 13:06	US escalates war against China: additional 10% tariffs.
15	03/03/2025 13:33	US announces worldwide tariffs.
16	03/03/2025 14:51	Trump specifies March 4 for announced tariffs on Canada and Mexico.
17	11/03/2025 10:01	US increases tarifs on Canadian steel and aluminum from 25 to 50%.
18	12/03/2025 12:11	US to announce tariffs on the EU after their retaliation.
19	12/03/2025 12:29	Trump announces tariffs on cars.
20	24/03/2025 12:26	Trump announces tariffs on pharmaceuticals.
21	26/03/2025 13:13	Trump holds press conference on announced auto tariffs.

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Table C.2, continued

No.	Date/time (ET)	Announcement detail
22	26/03/2025 17:24	Trump announces tariffs on lumber.
23	02/04/2025 16:26	Trump announces 10-50% tariffs on several countries.
24	07/04/2025 11:16	Trumps threatens additional 50% tariffs on China after their retaliation to Liberation Day tariffs.
25	08/04/2025 11:48	US to announce tariffs on semiconductors and pharmaceuticals.
26	08/04/2025 12:36	US imposes 104% tariffs on China.
27	17/04/2025 18:59	US propose additional 100% duties on Chinese cranes.
28	23/04/2025 17:35	Trump to announce a new tariff on China.
29	09/05/2025 07:27	After suggesting lowering China's tariffs to 50%, Trump sets on 80%.
30	23/05/2025 07:45	US threatens 50% tariffs on the EU.
31	06/07/2025 22:24	Trump threatens extra 10% tariff on nations siding with BRICS countries.
32	08/07/2025 12:56	Trump announces 50% copper tariffs, semiconductors to follow.
33	10/07/2025 20:16	Letters. 35% tariffs on Canada.
34	28/07/2025 09:47	Trump threatens new tariffs on China.
35	31/07/2025 18:58	Trump raises tariffs on Canada from 25% to 35%.
36	06/08/2025 17:25	Trump threatens 100% tariffs on chips and semiconductors tariffs.
37	25/08/2025 20:32	Trump threatens tariffs on countries with digital taxes.
38	25/09/2025 18:51	US will impose 25% tariffs on trucks.
39	25/09/2025 19:11	Trump imposes 30% tariffs on upholstered furniture, 50% on kitchen cabinets and bathroom vanities.
40	25/09/2025 19:24	Trump imposes 100% tariffs on branded/patented pharmaceuticals.
41	07/10/2025 12:24	Trump threatens new tariffs on Canada.
42	10/10/2025 16:50	Trump asserts he will impose a 100% tariff on China, on top of their current tariff.
43	20/10/2025 11:52	Trump threatens raising China tariffs to 155%.
44	08/12/2025 15:17	Trump threatens tariffs on Canadian fertilizers.
45	08/12/2025 17:56	Trump threatens 5% tariff on Mexico.
46	12/01/2026 16:46	Trump announces 25% tariffs on any country trading with Iran.
47	20/02/2026 13:35	Trumps adds a 5-month 10% global tariff to the current section 301 tariffs.
48	23/02/2026 07:05	Trump threatens to escalate tariffs "aggressively".
49	02/04/2026 15:23	US imposes 25% tariffs on steel, aluminum, and copper derivatives.
50	08/04/2026 07:30	Trump increases threatened tariffs for countries trading with Iran from 25 to 50%.
51	01/05/2026 11:50	Trump announces an increase in tariffs on European cars/trucks to 25%.
52	07/05/2026 15:12	Trump threatens to raise tariffs on the EU unless they cut a deal.
53	20/07/2026 17:00	US hits Canada with a 50% tariff across a broad range of goods including USCMA (exemptions for energy, potash, and critical minerals).
54	21/07/2026 18:57	Trump announces 100% tariffs on generic drugs from August 2028.

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Table C.2, continued

No.	Date/time (ET)	Announcement detail
55	23/07/2026 13:08	Trump launches a Section 301 investigation into the EU.
56	23/07/2026 16:57	US sets immediate 10%-12.5% tariff for many nations over forced labor (exempts oil, gas, fetilizer, food stuffs).

Notes: The 56 U.S. tariff announcements retained by the narrative rules of Section 2.2, January 2025 to July 2026. Date and time of the LSEG breaking-news headline in U.S. Eastern Time. Several announcements fall on the same day; their surprises are summed in the daily series.

Appendix D Predictability of the surprise

Table D.1: Predictability of the orthogonalized surprise

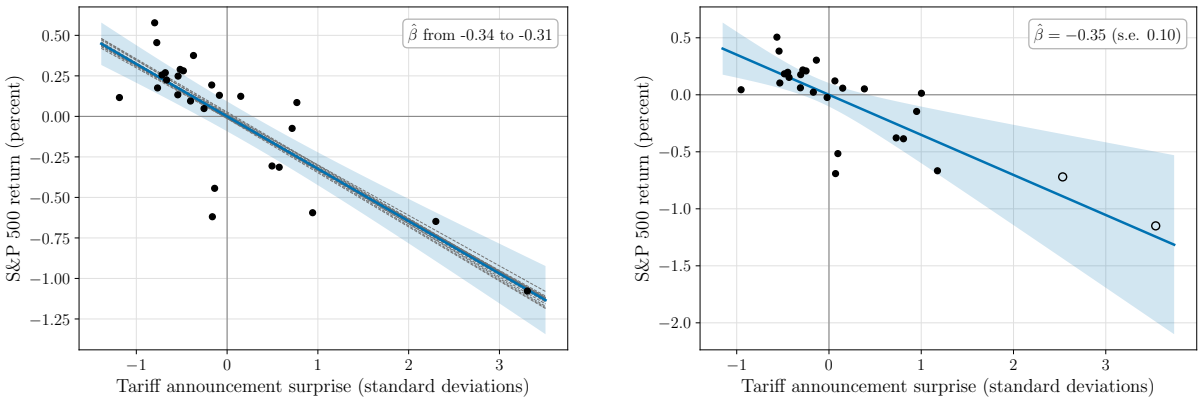
Lag	Surprise	GPR	VIX	EPU	TPU	SP500	DXY	Consump.	3M	1Y	10Y	ILS1Y	Tariff
1	−1.34	−5.53	5.30	2.44	−1.38	−42.62	6.05	−12.48	−8.34	−20.34	−34.67**	−29.64*	−14.96*
	(3.02)	(3.58)	(8.20)	(2.29)	(4.80)	(35.05)	(17.24)	(15.00)	(29.04)	(19.05)	(15.47)	(16.59)	(8.09)
2	3.25	4.31	−6.81	0.48	−0.95	48.19	22.72	−24.17	−34.64	35.95	42.14*	50.20*	15.03
	(4.13)	(3.48)	(8.12)	(3.39)	(5.19)	(39.09)	(32.18)	(26.86)	(46.66)	(23.07)	(24.16)	(29.91)	(30.03)
3	−2.55	−0.31	8.04	0.46	7.75	−23.76	4.39	16.58	−15.94	−38.15	−35.36	−43.11	−10.59
	(1.55)	(4.32)	(12.73)	(2.53)	(9.20)	(54.02)	(31.16)	(34.24)	(43.41)	(33.78)	(25.99)	(31.17)	(13.95)
4	2.87	1.42	5.33	−3.50*	−0.01	−45.04	−10.36	23.15	62.99	22.12	33.68	49.33	0.46
	(6.06)	(2.65)	(8.21)	(2.06)	(4.86)	(49.13)	(28.85)	(36.34)	(59.73)	(30.35)	(23.54)	(36.44)	(19.76)
5	1.78	−2.19	−9.50	−0.61	−0.94	35.14	−26.52	−34.82	−4.01	−39.04	−23.07	−47.71	9.03
	(3.49)	(4.28)	(8.08)	(3.51)	(5.62)	(36.02)	(34.61)	(40.08)	(40.33)	(24.48)	(24.55)	(44.28)	(22.30)
6	−4.85**	3.19	−2.03	−2.91	−0.24	7.73	−15.17	14.14	−22.34	19.93	−0.85	0.47	−0.40
	(2.29)	(3.19)	(6.60)	(2.11)	(4.31)	(31.98)	(42.67)	(12.57)	(49.88)	(18.94)	(13.11)	(24.86)	(19.41)
7	0.86	2.68	−1.68	0.63	−4.63	25.74	15.33	−10.26	18.06	22.13	31.50	43.50	−4.95
	(3.85)	(4.50)	(5.47)	(1.85)	(4.46)	(33.82)	(20.02)	(12.27)	(39.74)	(18.46)	(20.81)	(32.22)	(9.42)
8	9.90	−0.90	3.78	1.43	−6.72	−15.48	19.25	15.96	1.78	−7.71	−24.92	−25.71	−3.46
	(7.15)	(5.30)	(7.40)	(3.63)	(7.16)	(29.99)	(39.94)	(25.10)	(59.62)	(24.71)	(21.18)	(19.84)	(5.85)
9	0.46	−7.53	−2.86	0.02	10.40	15.29	−46.93	−10.89	59.50	24.18	22.92	−11.03	3.31
	(3.76)	(6.20)	(6.47)	(4.46)	(7.86)	(30.49)	(51.37)	(19.27)	(58.96)	(25.75)	(20.93)	(25.90)	(11.47)
10	0.92	−0.15	−4.08	−0.88	−4.48	−9.03	41.39	20.80	−51.95	−13.69	−10.54	12.56	−1.37
	(5.05)	(2.74)	(3.83)	(2.19)	(5.89)	(22.23)	(38.73)	(14.50)	(43.37)	(14.39)	(13.96)	(20.51)	(5.78)
Joint test p (asymptotic)	0.264	0.085	0.080	0.644	0.115	0.225	0.824	0.099	0.875	0.314	0.559	0.769	0.019
Joint test p (randomization)	0.803	0.084	0.159	0.817	0.192	0.204	0.938	0.070	0.950	0.196	0.521	0.844	0.358
R^2	0.031	0.013	0.012	0.005	0.013	0.016	0.031	0.030	0.011	0.019	0.028	0.011	0.014
N	567	567	566	567	567	567	567	567	566	566	566	567	567

Notes: Same regressions as in Table 1, with the surprise replaced by the residual of its regression on all the lags that are significant (at any level) in Table 1. The residual is rescaled to the units of the raw surprise. All other details as in Table 1.

Appendix E Additional figures

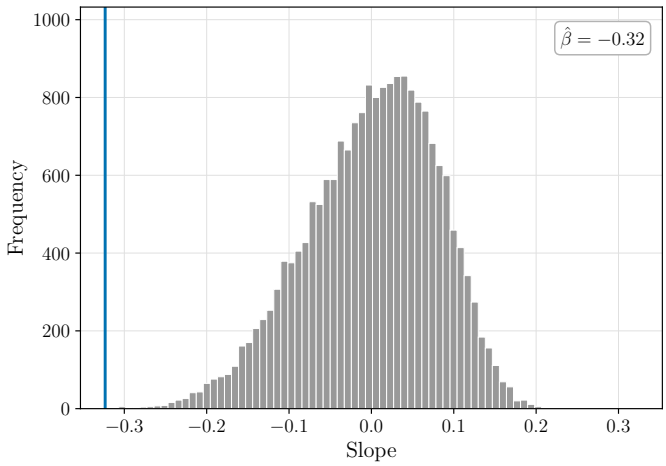
Figure E.1: High-frequency event study: robustness

(a) *Jackknife (leave-one out) exercise* **(b)** *Excluding the two largest surprises*



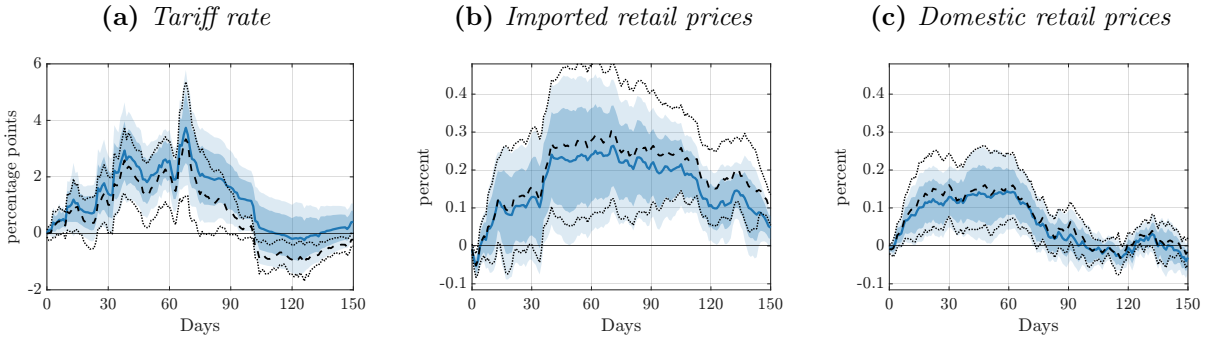
Notes: Robustness of the OLS estimate of equation (3) shown in Figure 3. Panel (a) reports the fitted lines obtained by dropping one announcement at a time (gray dashed), together with the baseline fit. Panel (b) reports the fit obtained by excluding the two largest surprises (hollow dots), on March 3 and March 11, 2025. The box reports the range of the slopes in panel (a), and the slope and its HC3 standard error in panel (b). Shaded areas are 95 percent confidence bands based on HC3 standard errors. In both panels, the surprise is standardized by its standard deviation across the 26 announcements of the baseline sample, and both variables are demeaned, across these 26 announcements in panel (a) and across the 24 remaining announcements in panel (b).

Figure E.2: Permutation test (high-frequency event study)



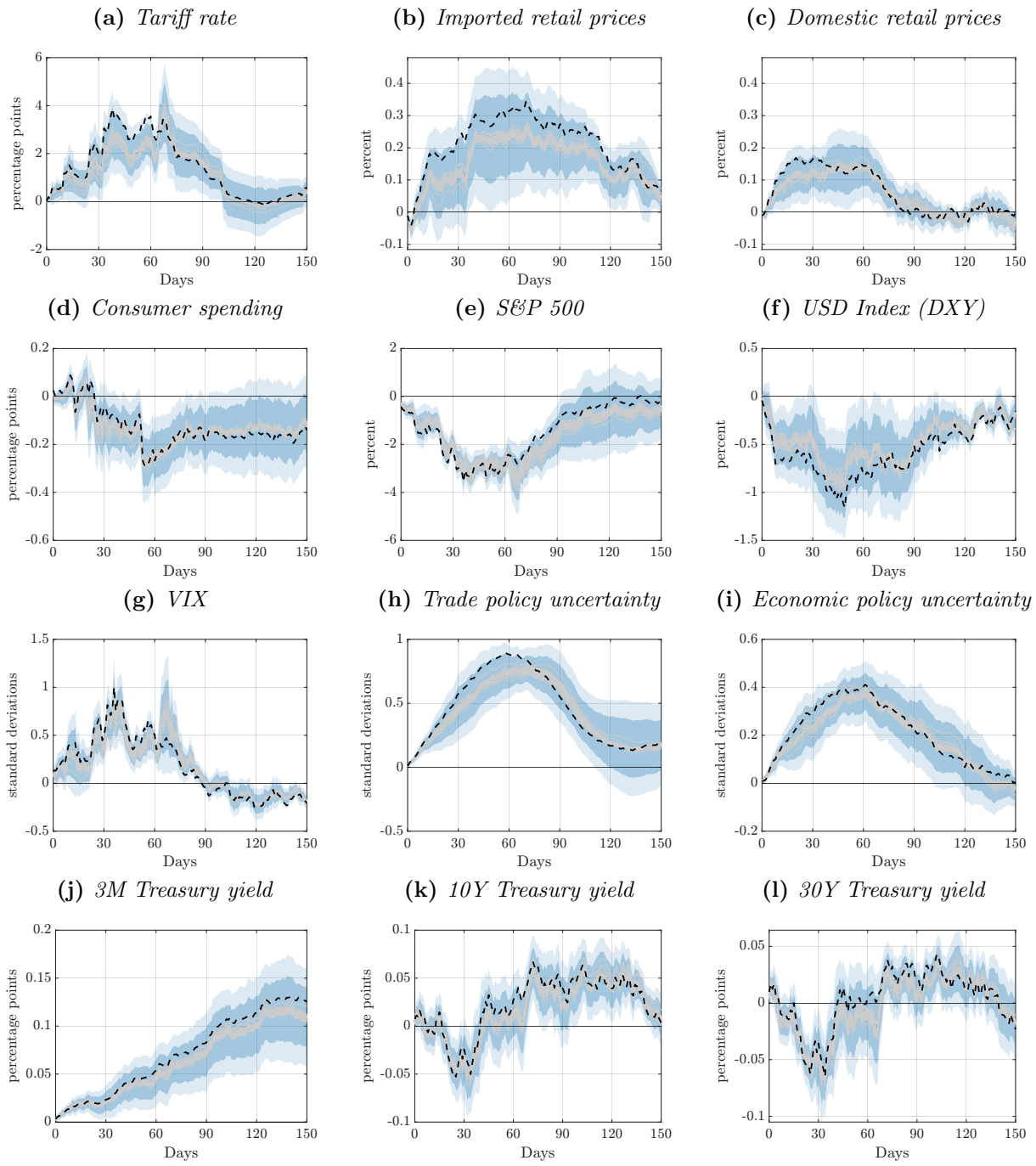
Notes: Distribution of the OLS slope of equation (3) across 20,000 random permutations of the surprises across the 26 announcements of Figure 3. The vertical line marks the estimated slope $\hat{\beta}$.

Figure E.3: Same set of controls of Figure 5



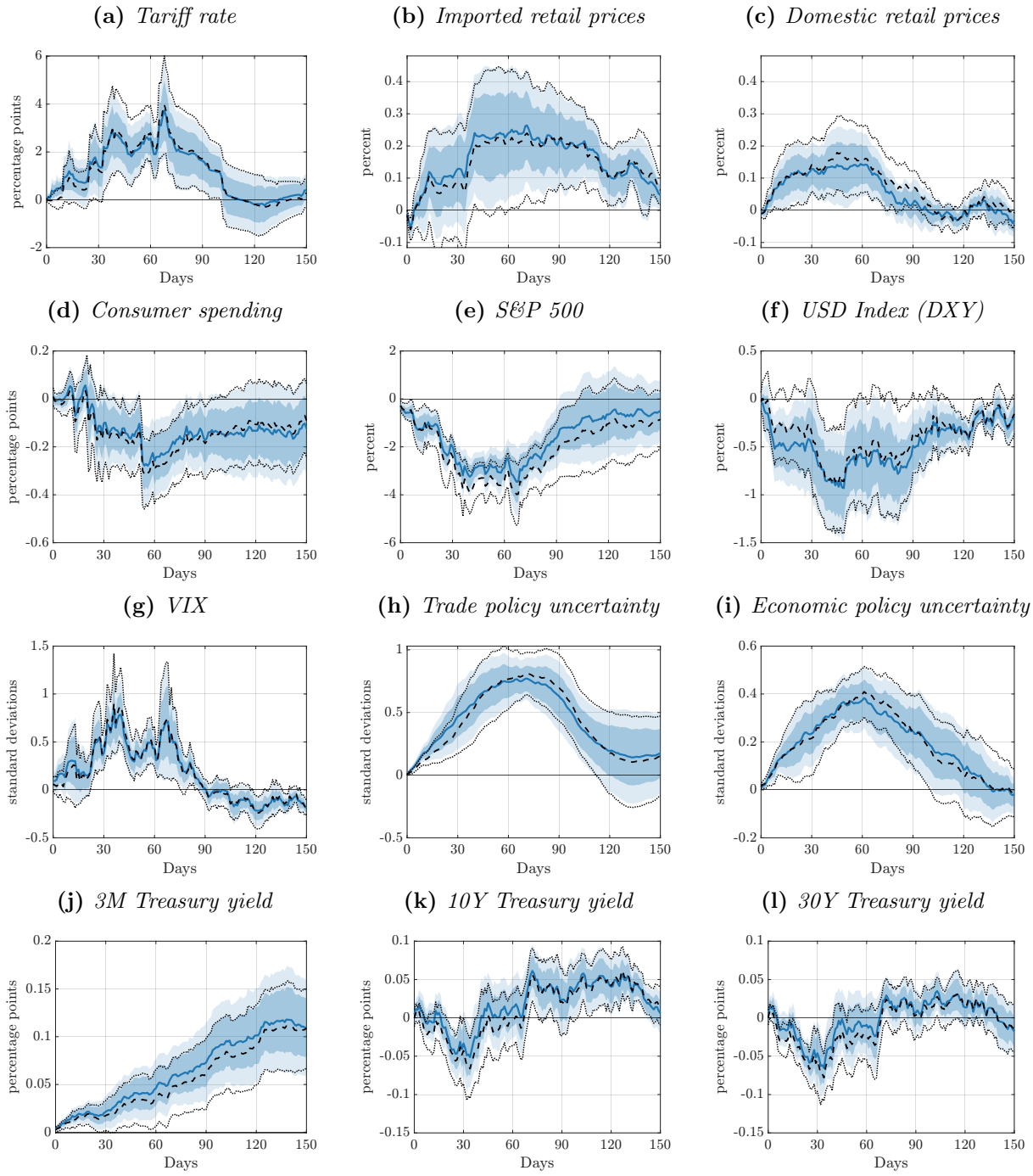
Notes: Impulse responses to a one-standard-deviation tariff announcement surprise, estimated with the local projections in equation (4), when each local projection controls for 30 lags of the tariff rate and of the imported and domestic retail price indexes, the same controls as in equation (5). The blue line is the baseline response, with 68 and 90 percent confidence bands based on Newey–West standard errors. The black dashed line is the alternative response, and the black dotted lines delimit its 90 percent band.

Figure E.4: Jackknife (leave-one-out) exercise



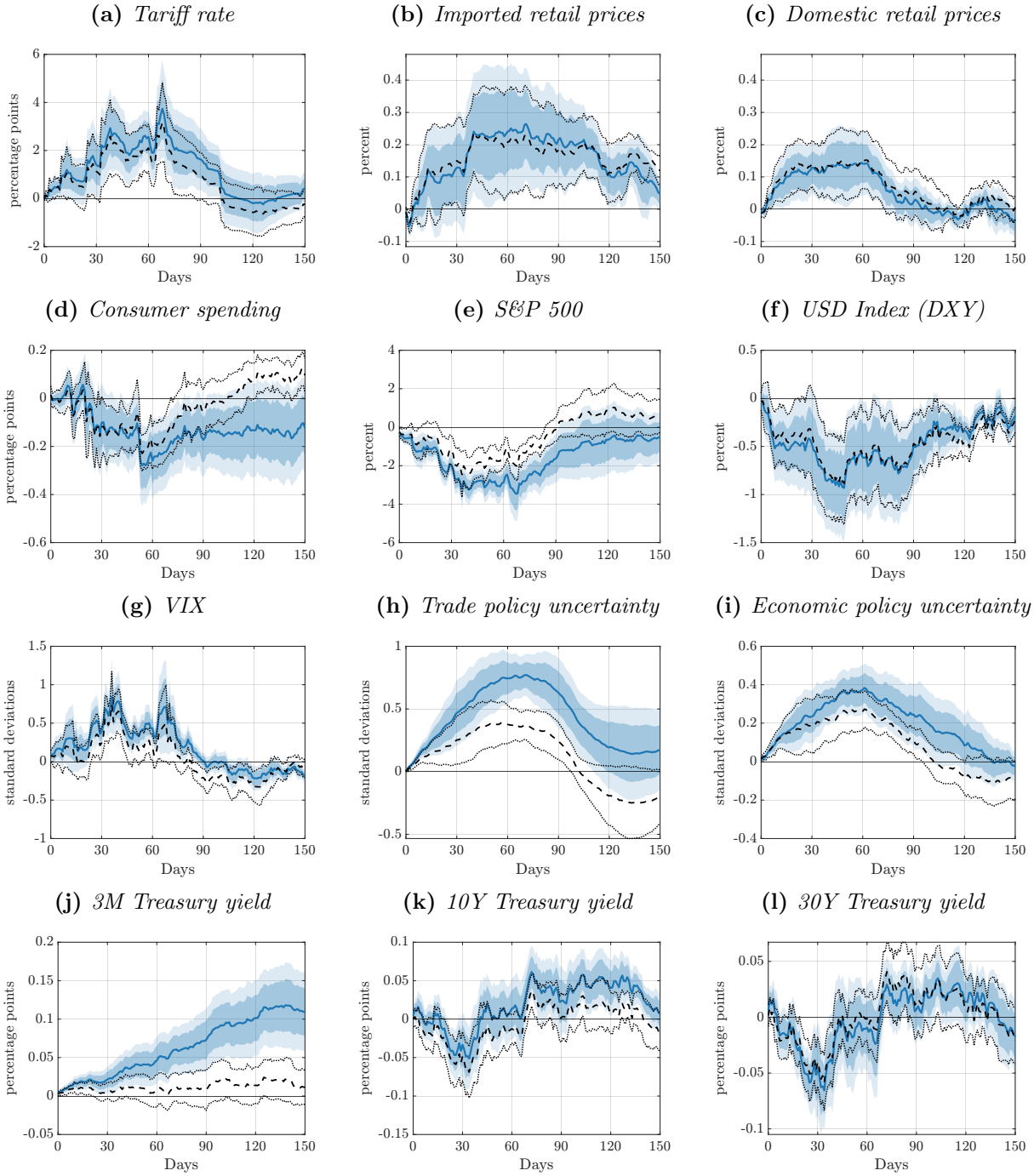
Notes: Impulse responses to a one-standard-deviation tariff announcement surprise, estimated with the local projections in equation (4), dropping one announcement at a time. The blue line is the baseline response, with 68 and 90 percent confidence bands based on Newey–West standard errors. Gray lines are the responses obtained by dropping one announcement at a time, and the black dashed line is the response excluding the largest, and most influential, surprise.

Figure E.5: Excluding the Liberation Day cluster



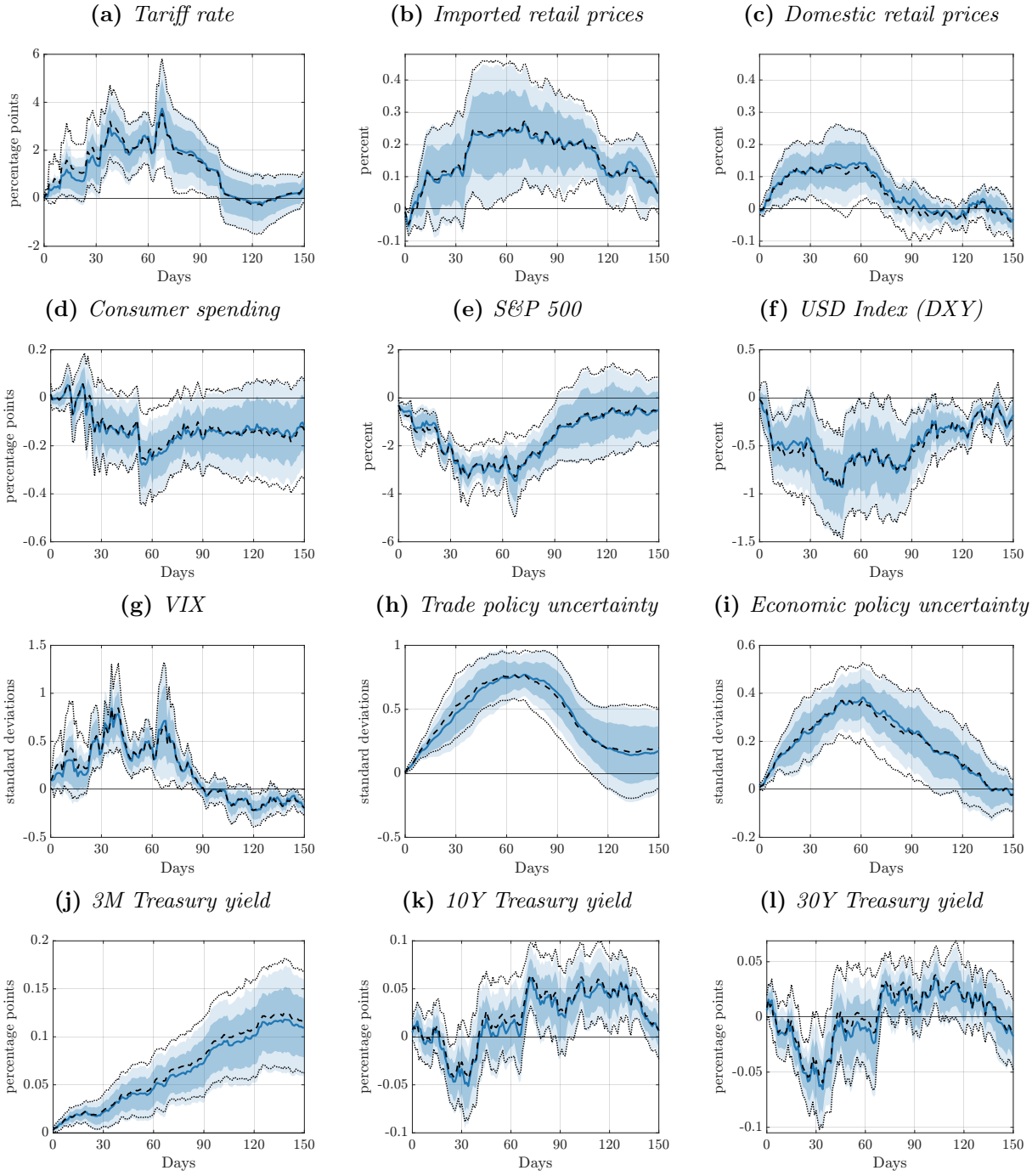
Notes: Impulse responses to a one-standard-deviation tariff announcement surprise, estimated with the local projections in equation (4), with the surprise set to zero on the three announcement days between April 2 and April 8, 2025. The blue line is the baseline response, with 68 and 90 percent confidence bands based on Newey–West standard errors. The black dashed line is the alternative response, and the black dotted lines delimit its 90 percent band.

Figure E.6: Controlling for the predictable component of the surprise



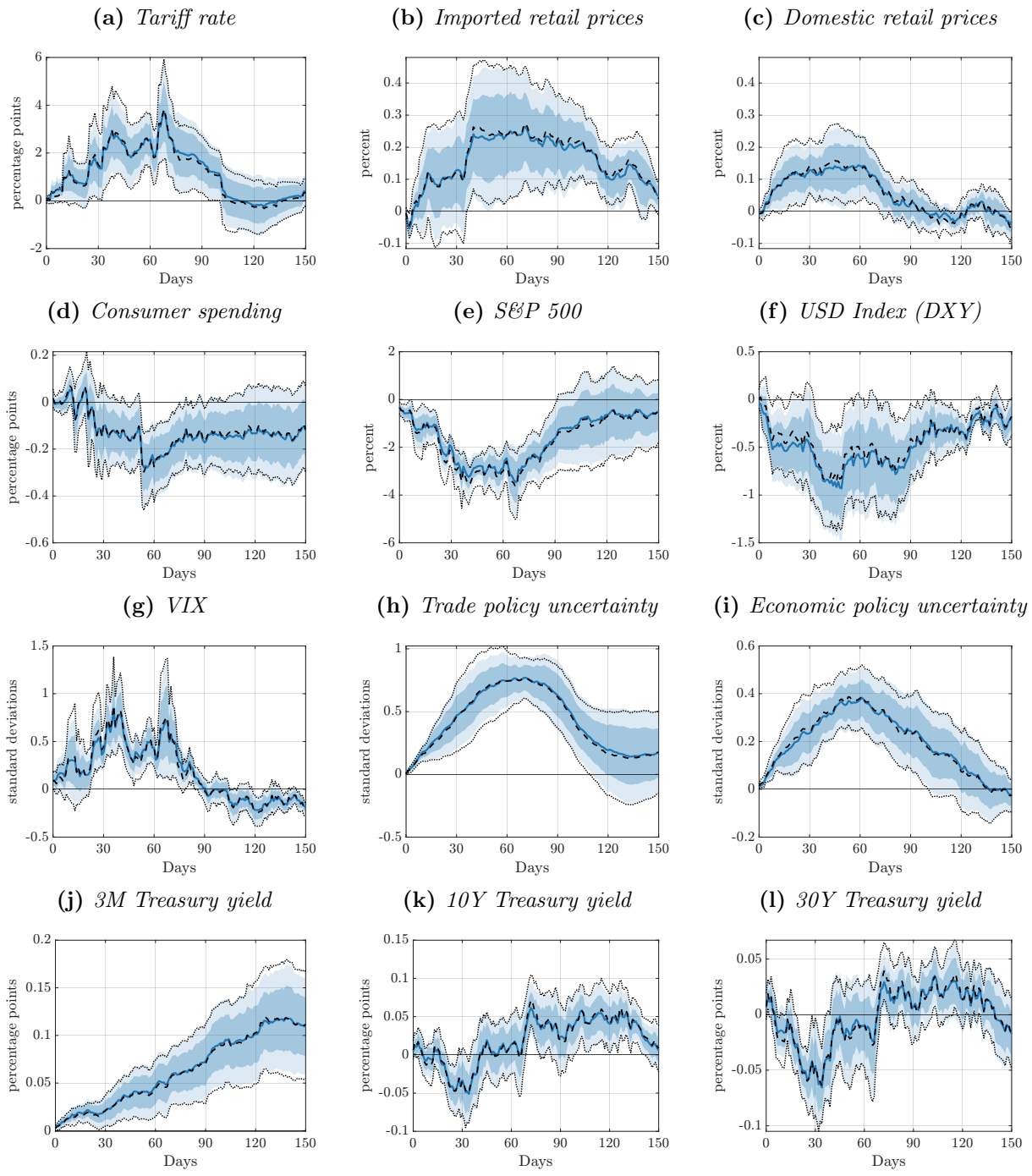
Notes: Impulse responses to a one-standard-deviation tariff announcement surprise, estimated with the local projections in equation (4), augmented with all the lags that are significant (at any level) in Table 1 as controls. The blue line is the baseline response, with 68 and 90 percent confidence bands based on Newey–West standard errors. The black dashed line is the alternative response, and the black dotted lines delimit its 90 percent band.

Figure E.7: Surprise series measured over a narrower window



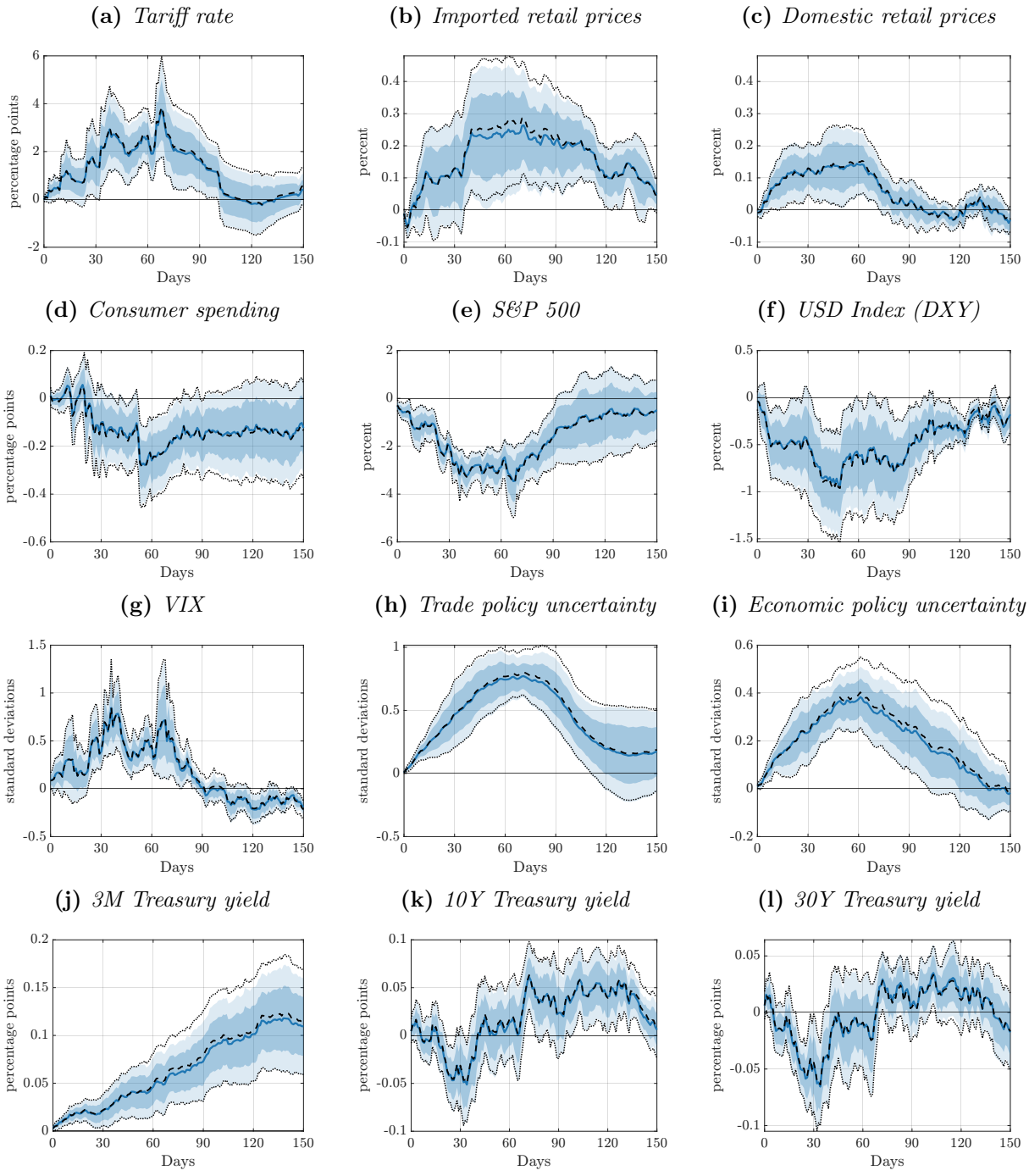
Notes: Impulse responses to a one-standard-deviation tariff announcement surprise, estimated with the local projections in equation (4), with the surprise measured over the window from ten minutes before to twenty minutes after each announcement. The blue line is the baseline response, with 68 and 90 percent confidence bands based on Newey–West standard errors. The black dashed line is the alternative response, and the black dotted lines delimit its 90 percent band.

Figure E.8: Surprise series measured over a wider window



Notes: Impulse responses to a one-standard-deviation tariff announcement surprise, estimated with the local projections in equation (4), with the surprise measured over the window from twenty minutes before to forty minutes after each announcement. The blue line is the baseline response, with 68 and 90 percent confidence bands based on Newey–West standard errors. The black dashed line is the alternative response, and the black dotted lines delimit its 90 percent band.

Figure E.9: Tariff announcements through August 2025



Notes: Impulse responses to a one-standard-deviation tariff announcement surprise, estimated with the local projections in equation (4), with the surprise from the announcements up to August 31, 2025 only, set to zero afterwards, and the outcome sample unchanged. The blue line is the baseline response, with 68 and 90 percent confidence bands based on Newey–West standard errors. The black dashed line is the alternative response, and the black dotted lines delimit its 90 percent band.